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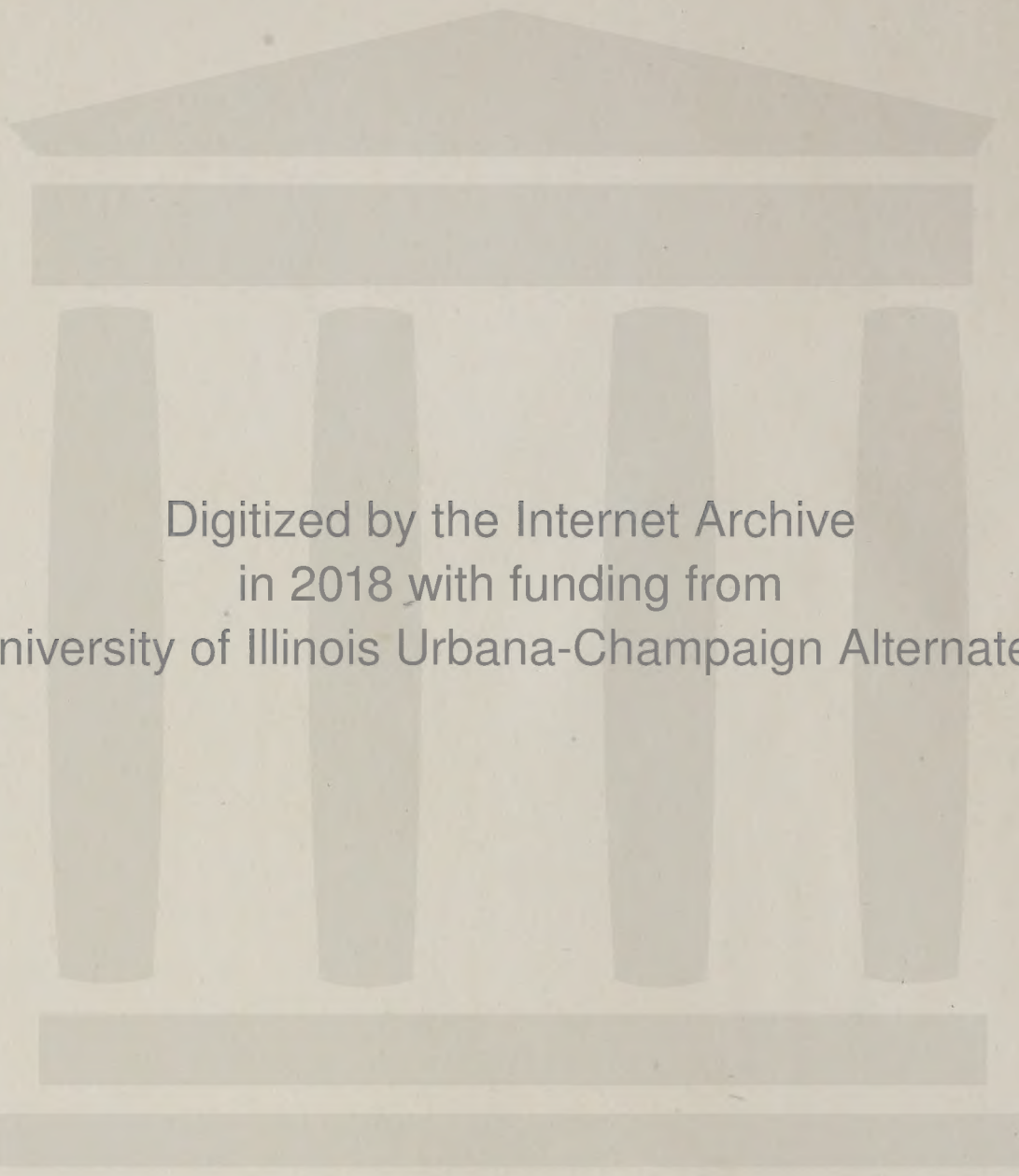
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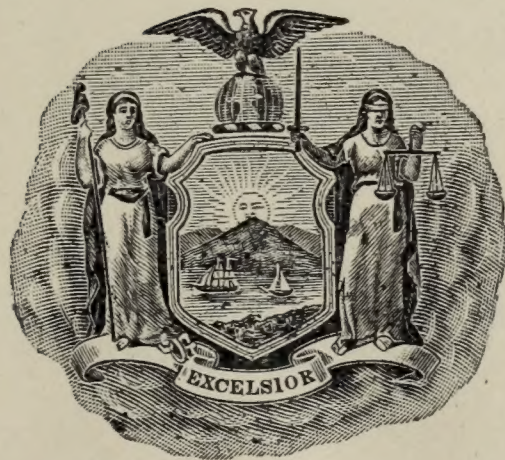
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DEPARTMENT OF AGRICULTURE

TWENTY-FIRST ANNUAL REPORT

OF THE

Department of Agriculture

For the Year Ending September 30, 1913

PART II

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TRANSMITTED TO THE LEGISLATURE JANUARY 15, 1914

ALBANY
J. B. LYON COMPANY, PRINTERS

1914

STATE OF NEW YORK

No. 21

IN ASSEMBLY

JANUARY 15, 1914.

TWENTY-FIRST ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE

PART II

To the Honorable the Legislature of the State of New York:

Pursuant to the provisions of the Agricultural Law, I herewith submit this, Part II of the Twenty-first Annual Report of the Department of Agriculture of the State of New York, for the year ending September 30, 1913.

CALVIN J. HUSON,

Commissioner of Agriculture

January 15, 1914.

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STATE OF NEW YORK
DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Bulletin 40

A Few Simple Practical Tests for Food
Adulteration

BY

W. B. WHITE

State Chemist, Ithaca Laboratory, New York State Department of Agriculture

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A Few Simple Practical Tests for Food Adulteration

INTRODUCTION

IF THE State agricultural law with regard to pure foods is to be at once efficient and beneficial, producer, dealer and consumer must cooperate in its enforcement. It too often happens that a small dealer is selling an adulterated foodstuff, when he honestly supposes it to be pure. And it is the rule, rather than the exception, that the consumer buys the things for his table without a thought of their possible adulteration or of the way they are labeled. First of all, *read the label carefully*. This applies both to dealer and consumer. Almost any adulterant, not actually poisonous or filthy, can be put into a food provided it is declared on the label. The words "Compound," "Blend" or "Substitute" almost invariably mean that a cheaper product has been added. Its food value may be as high and its palatability as great, but if a man desires the pure product and is willing to pay for it, he has a right to receive what he asks for. Nothing else is "just as good" to him.

The harmfulness of preservatives is a much-discussed question. It seems, then, to be a thing for the individual to pass on for himself, according to his own views. He has only to read his label and accept or reject foods containing preservatives. When we consider that most of the laws with regard to food products have a clause relating to how the food should be labeled or branded, the importance of reading the label need hardly be dwelt upon.

This bulletin is designed to help out with one phase of this educational campaign. It aims to place a few simple practical tests at the disposal of the average intelligent man who has not had a chemical training. Little claim to originality is made in any of these tests, though some of them have been modified slightly, as our experience has suggested changes. All have been tried out, so they are thoroughly practicable. It is hoped that they will be used widely, not only by the State inspectors in their work, but by dealers and consumers throughout the State, who are striving for pure foods.

As all tests have been as far as possible shorn of technical terms and complicated apparatus, we trust that any layman with a little practice can operate them successfully. If one can do away with the popular belief that chemistry and chemical tests are mysterious and beyond the ken of ordinary mortals, we feel sure these tests will be found simpler than they may at first appear to the man without technical training. It is strongly urged that failure of a test at the first trial be not laid to the test itself; for no amount of written directions will enable one to make a test without practice. If any difficulty arises which does not then disappear we shall be glad to give any advice or help that may be needed.

It must not be supposed that these few tests will enable one to pass absolutely on the purity of a foodstuff. Hundreds of the tests employed by chemists for this purpose are too intricate for the layman to use. The data gained by these few will, therefore, be only partial. We feel confident, though, that if intelligently used they will detect adulteration in the majority of cases.

The writer wishes to express his thanks to State Chemist H. C. Troy, whose kindly advice and criticism have been almost indispensable in getting up this little bulletin, especially the portion dealing with milk.

GENERAL REMARKS

It will be noticed that the appearance and taste of the sample are frequently mentioned in these pages, as a guide to its purity. In the hands of an experienced man these are very important. Any inspector or dealer in foodstuffs may make himself proficient along these lines by intelligently using his eye and his sense of taste on a larger number of samples of known composition, both pure and adulterated. Such physical tests are very difficult of description and our remarks in this connection are therefore brief but nevertheless important, for by continued use these tests become extremely simple and surprisingly accurate.

Far more can be learned by operating a test a few times than by any amount of reading about it, and it is very strongly urged that the reader familiarize himself with each one of the tests given in this bulletin before he attempts to use it in actual practice. This he can easily do by obtaining samples of known purity and adulterating them with different amounts of the substance which the test is designed to detect, and then carefully observing the results of the test both on the pure and on the adulterated standards. Even when using the tests in actual practice it is not a bad plan to do this. Many careful chemists employ this procedure, especially when they have not used a test for some time.

TESTS

MILK

A large adulteration by watering or skimming is indicated to the experienced person by the thin appearance or bluish color of the milk and by its peculiar watery flavor and lack of creamy smoothness on the tongue. When pure milk flows from glass it leaves a creamy film, while milk watered or skimmed to any great extent leaves a film nearly colorless.

The Lactometer. This is an instrument for measuring the specific gravity, or heaviness, of the milk. The milk should be brought to a temperature of about 60° F. and thoroughly mixed, preferably by pouring it several times from one vessel to another. Milk should always be well mixed before sampling for any test, to distribute the risen cream uniformly through the liquid. Fill a glass cylinder with the mixed sample and float the lactometer. When at rest take the reading on the lactometer scale at the surface of the liquid. Take also the temperature of the milk with a Fahrenheit thermometer. (Some lactometers also carry a thermometer.)

These lactometers, as well as all the other apparatus and chemicals mentioned in this bulletin, can be furnished by any reliable chemical supply house. Any house will be glad to send a catalogue to assist one in ordering.

There are two lactometers on the market, the Quevenne and the New York State Board of Health. We strongly recommend the former as more convenient and more scientific, but as some inspectors use the B. of H., the method is given for correcting its readings for temperature and converting them to Quevenne readings.

As it is customary to take all specific gravity readings at 60° F. (15.5° C.), or to correct them to that figure, wherever specific gravity is mentioned in these pages it will be understood that this temperature is the one used.

The correction for the Quevenne instrument is 0.1 of a unit on the lactometer scale for every degree Fahrenheit. Since liquids are in general heavier at lower temperatures we

add this correction if the temperature is above 60° F. and *subtract* it if it is below. Thus a reading of 30.5 Quevenne at 64° F. would be $30.5 + (4 \times 0.1) = 30.9$ at 60° F. On the B. of H. the correction is 0.3 of a unit for every degree Fahrenheit. To convert B. of H. readings to Quevenne multiply by .29. Thus $110.5 \text{ B. of H.} \times .29 = 32.045$, or 32.0, since the instrument only reads to the first decimal place.

We are now in a position to interpret some of the information the lactometer has given us; but we wish to say at the outset that any conclusions based on lactometer data alone, especially when drawn by an inexperienced man, are apt to be misleading. This is very evident when we remember that whole milk is heavier than water and butter fat is lighter. Watering will, therefore, *lower* the lactometer reading and skimming will *raise* it, while a judicious blending of the two might not appreciably alter it. Again, a rich milk which would normally give a high lactometer reading might, when watered, read the same as a poor unadulterated milk; and a very rich pure milk, the same as a naturally poor milk partly skimmed. Here is where the appearance comes in as a means of selecting suspicious samples to be further investigated.

In general the following holds true:

1. Any milk reading below 29 Quevenne (at 60° F.) is open to the suspicion of having been watered.
2. Since average milk reads 32 and skim milk about 35, any milk reading 34 or 35, or even 33, if it does not appear very rich, may be justly suspected of being skimmed.
3. Any milk reading 29–31, and very poor in appearance, has very possibly been both skimmed and watered.

Here we see at the very outset the value of being a judge of the appearance of pure and adulterated milk.

The Babcock Fat Test. This gives quite accurately the per cent. of butter fat in the milk and is, therefore, of great value. To operate it one needs a hand centrifuge, some Babcock milk test bottles, a Babcock 17.6 cc. (cubic centimeters) pipette, an acid measure and some commercial sulphuric acid (specific gravity, 1.82 to 1.83).

Mix the sample as usual. Fill one of the pipettes above the mark by suction, cover the upper end with the finger and let the milk run out until it is down to the mark. Let the 17.6 cc. of milk run into the test bottle. Fill the acid measure and also let this run into the test bottle, holding same meanwhile in an inclined position, so the acid runs down the side and under the milk.

Formaldehyde Test. Since this may be very conveniently run in connection with the Babcock test, it is logical to take it up at this point. If the sulphuric acid contains iron, as the commercial acid usually does, the operator has only to hold the test bottle up to the light at this stage and note the borderline between the layer of acid on the bottom and the layer of milk on top. If formaldehyde is present there will be at the junction a marked *violet* color, which will grow stronger after a few seconds, especially if the bottle be *very cautiously* rotated so as to bring a trifle more of the milk in contact with the acid without mixing the two to any extent. If no color develops at the end of 15 minutes formaldehyde may be assumed to be absent. Pure milk gives a deep, reddish-brown color with this test which is often mistaken for an indication of a small amount of formaldehyde, so it is well to put a drop of dilute formalin in some milk and try the test out. A drop of a 10 per cent. solution of ferric chloride added to the milk before the addition of the acid will greatly increase the delicacy of the test.

To complete the fat test the contents of the bottle are now thoroughly mixed, first by a rotary motion and finally by vigorous shaking, taking care, however, that none of the liquid splashes out. Continue the shaking about 2 minutes, and then place it in centrifuge, always balancing a bottle by another on the opposite side, and whirl for 5 minutes at the proper speed for that particular machine. Fill bottles to the neck with boiling water in a cold machine, or hot water (150° F.) in a steam machine, and whirl again for 2 minutes. Finally fill with more boiling water, until the column of butter fat comes up into the upper third of the scale, and whirl 1 minute

longer. Take out bottles and read the fat column at once, taking the upper reading at the *top* of the meniscus, thus, and subtracting from it the lower reading. The difference gives the percentage of fat direct. Thus, $9.3 - 4.8 = 4.5$ per cent. fat.



Precautions

1. Run samples in duplicate. They should check to 0.1 per cent.
2. Have acid, milk and glassware fairly cool (below 70° F.) or the fat will be darkened by burning.
3. Have acid of the proper strength. Test with hydrometer, an instrument of the same type as the lactometer. It should read 1.82–1.83. If the acid is right when purchased and is kept in glass-stoppered bottles and *never left unstoppered*, it will hold its strength a long time.
4. Shake the acid and milk together *very thoroughly*, or particles of casein will appear in the fat column.
5. Read the test at once, or the reading will be too low.
6. Wash all bottles with hot water and washing powder to remove all fat.

Since the State standard for butter fat in milk is a minimum of 3 per cent., any milk reading less than that is manifestly an illegal milk. But we also have a law regarding total solids in milk, the minimum legal amount being 11.5 per cent.

From our lactometer and Babcock data it is possible to calculate, roughly, the solids not fat and, in turn, the total solids by merely adding to this the fat. Perhaps the best of the many formulas for this purpose is that used by State Chemist H. C. Troy, since it is the simplest and the one giving the most accurate results on an *average* milk.

It is $\frac{F + L}{4} = \text{S. N. F.}$, where F. = per cent. of fat and L. = lactometer reading (at 60° F.).

For example, a 3.5 per cent. milk reading 31.2 Quevenne would have $\frac{3.5 + 31.2}{4} = 8.55$ per cent. solids not fat and $8.55 + 3.5 = 12.05$ per cent. total solids. Thus we see that

the lactometer reading combined with the Babcock test will enable us to tell approximately the percentage composition of the milk and to judge, therefore, if it is up to the minimum standard set by law.

The State law also requires that nothing shall be added to or taken from the milk as obtained from the cow, thus covering cases of skimming or watering, even if the minimum State standards of fat and solids have not been reached.

To aid in interpreting data to this end the following table compiled by State Chemist H. C. Troy is appended. It shows the average percentages of solids not fat and total solids corresponding to a given per cent. of fat in a normal milk. We wish to emphasize the fact that this table is not infallible when applied to *all* milks. All that is claimed is that it is a fair approximation for an average milk.

In general if the solids not fat actually found are markedly lower than those given in the table opposite the percentage of fat found by the Babcock test, the milk is possibly watered. If they are higher, on the other hand, the milk may have been skimmed.

FAT	SOLIDS NOT FAT	TOTAL SOLIDS
3.00	8.40	11.40
3.25	8.47	11.72
3.50	8.55	12.05
3.75	8.62	12.37
4.00	8.70	12.70
4.25	8.77	13.02
4.50	8.85	13.35
4.75	8.92	13.67
5.00	9.00	14.00
5.25	9.07	14.32
5.50	9.15	14.65
5.75	9.22	14.97
6.00	9.30	15.30

Test for Nitrates. Pure milk ordinarily contains no nitrates while the average well and spring water often does, so a test for nitrates is sometimes of value in giving a direct indication of the presence of added water. All that is required is a solution of 1 part of c. p. (chemically pure) diphenylamine in 100 parts of c. p. sulphuric acid. Pour about an inch of milk

into a test tube and add half as much of the acid solution, letting it run down the side as in the Babcock test. A blue color at the junction of the liquids indicates the presence of nitrates. This must be observed quickly as the charring action of the acid on the milk soon masks it. Sometimes a *very slight* rotary movement will cause it to flash up and then almost instantly disappear in the resulting black char.

MILK POWDERS*

Owing to the growing use of milk powders, we add a modification of the Babcock fat test devised by Chemist N. Gregory Redmond of the Merrell-Soule Co. Laboratory, and published in the July number of the *Journal of Industrial and Engineering Chemistry*.

Weigh out 2.5 grams of the milk powder and transfer it to a *dry* Babcock milk bottle. Add 31 cc. of dilute sulphuric acid (39.5 cc. concentrated acid and 60.5 cc. water) and place the bottle in a vessel of gently boiling water. Shake frequently until the powder is entirely dissolved and the solution is dark brown in color. This usually takes from 7 to 10 minutes. Remove the bottle, add 12 cc. of "Babcock acid" and shake thoroughly by cautiously rotating. Then whirl in machine 5 minutes and so on, following the exact procedure for a milk from this point. The reading $\times 7.2$ will give the percentage of fat ($2.5 : 18 = 1 : 7.2$).

If the powder purports to be from a whole milk the percentage of fat should be at least 26 and should be more than that for an average milk. From Troy's table $3 : 11.40 = 26.4 +$ percent. (assuming the powder to contain no water at all, which is nearly correct). A fat content below 26 per cent. would indicate that the product had been made from a partly skimmed milk.

CREAM

The State standard for cream is a minimum fat content of 18 per cent., so the Babcock test is by far the most important one to consider in this connection. The method of procedure

*This test does not apply to a sweetened condensed milk.

is the same as in the case of milk, except that a regular cream test bottle is used and the sample is *weighed*, not measured, owing to the great variation in specific gravity and viscosity of cream with varying percentages of butter fat. The "9-gram cream bottle" should be used. This takes a 9-gram charge of cream. Add 9 cc. of water and mix. From here on the procedure is the same as for milk, except that the *bottom* of the meniscus is read at the upper end of the fat column. The appearance of the cream will always be a valuable guide in picking out suspicious samples. In general the thickness, or viscosity, of the cream will be a guide as to its fat content, though a fairly rich separator cream may appear thin when fresh and warm, and a rather poor cream may seem quite heavy when old. A cream testing low in fat and yet appearing quite thick is open to the suspicion of containing a thickener.

Gelatin. Dissolve 1 part by weight of mercury in 2 parts of concentrated c. p. nitric acid (sp. gr. 1.42) and add 24 times this volume of water. Place 10 cc. of this solution in a test tube, together with an equal amount of the cream. Shake well and add 20 cc. of water. Shake again, let stand 5 minutes and filter. If much gelatin is present the solution will come through cloudy or opalescent. To a little of this liquid in a test tube add an equal amount of a saturated solution of picric acid. If the solution remains perfectly clear, gelatin is absent. Small amounts give a cloudiness, larger ones a yellow precipitate.

Starch is sometimes added as a thickener. To detect it, heat a small amount of the cream to boiling in a test tube, cool and add a drop of iodine solution. A blue color proves the presence of starch.

Formaldehyde is detected the same way as in milk.

BUTTER AND ITS SUBSTITUTES

Since oleomargarine and process butter are sometimes sold for butter, it is very important that we be able to tell the three apart by simple tests. The "spoon test" serves to distinguish between genuine butter, on the one hand, and oleomar-

garine and process butter on the other. One has only to melt in a spoon a piece of the sample the size of a hickory nut, over a lamp or gas flame, melting cautiously at first. Butter boils quietly, foaming freely. While boiling the foam swells up until it fills the spoon and *holds* for some time. Oleomargarine and process butter, on the contrary, boil noisily with a sputtering or whistling sound. The bubbles break almost immediately, so that practically no foam is formed on the surface.

The Waterhouse test serves to distinguish between oleomargarine and either genuine or process butter, that is, between butter fat and foreign fats. Fill a tin cup or other suitable vessel half full of skim milk and heat nearly to boiling. Melt a piece of the sample about as big as a butternut and place in the hot milk. Set the cup into a pan of ice water and stir briskly with a small wooden splinter, giving a quick rotary motion. Keep this up until the milk is quite cool, and if the substance be oleomargarine it should be easy to gather the fat into a mass at the center, so that it may usually be pierced with the splinter and lifted out. Butter fat, on the other hand, whether it be from genuine or process butter, will not gather in a lump but will float quite uniformly on the surface.

Test for Oleomargarine. Place the sample in a large test tube and melt in a vessel of hot water. If the fat melts clear the sample is probably pure butter; if cloudy, it is probably oleomargarine or process butter. Filter the fat through a hot *dry* filter. (Placing the filter in a hot oven is a good method.) In a large test tube place 20 cc. of a mixture of 1 part glacial acetic acid, 6 parts ether and 6 parts alcohol. Add to it about 1 cc. of the filtered fat. Stopper tube and shake well. Immerse in water at 15° C. (60° F.) and let stand 15 minutes. Pure butter will remain almost clear, while oleomargarine will give a copious precipitate; and even butter containing a small amount of oleomargarine will give a marked deposit.

Artificial Colors. These are permitted in butter by the State law, provided they are not harmful. They are, however, prohibited in oleomargarine and a simple method for detecting the two most important types is here given.

The sample is melted and filtered as before. Two small test tubes are taken and into each is placed about an inch of the fat. An equal amount of ether is added and the fat dissolved by shaking. (*Caution:* In using ether the operator should be at least 6 feet distant from any flame as it is extremely inflammable.) To one tube add about 2 to 3 cc. of dilute hydrochloric acid (1 to 4) and to the other the same amount of dilute potassium hydroxide solution (1 to 20). An azo (coal tar) dye will color the layer of acid pink, while annatto will color the potassium hydroxide layer yellow. Both lower layers will be colorless provided no color has been used. Often an azo dye may also be detected by merely placing a pinch of fuller's earth on the sample. Azo dyes will color it pink in a few hours.

The sense of taste may be so cultivated as to be a valuable help in distinguishing oleomargarine, and we are often able to sort out the suspicious samples in this way, always, of course, confirming our observations by definite tests. Only long practice will bring out the difference in taste between butter and oleomargarine, but once learned it is quite marked. The oleomargarine seems to give a peculiar flavor of cooked pork near the root of the tongue, just after swallowing.

Here again, at the risk of becoming tiresome, we wish to urge the importance of trying out the tests on samples whose nature is *known*, before any work is done on unknowns.

CHEESE

The main thing to be looked for here is the selling of "skim" or "part skim" cheese for "full cream" or, more properly, "whole milk" cheese. The Babcock fat test will give us the necessary data here, for a whole milk cheese will seldom run below 32 per cent. fat; so that any cheese showing less than that figure is very possibly a "skim" or "part skim."

The sample, consisting of about 3 plugs from different parts of the cheese, is chopped fine and thoroughly mixed. Six grams are weighed into a 9-gram cream bottle and 12 cc. of warm water are added. Add 17.6 cc. of acid as in the Babcock test for milk and cream and proceed in exactly the same

way, except that longer shaking may be necessary to dissolve all of the cheese in the acid. A trifle more acid may here be added if the cheese does not dissolve readily. Care must be taken to dissolve completely, or a low result will be obtained. Multiply the result by $1\frac{1}{2}$ to obtain the per cent. of fat ($9 : 6 = 1\frac{1}{2} : 1$).

LARD

Cottonseed oil and beef stearin, or tallow, are the chief adulterants here. For the latter there are no reliable simple tests, so only the former will be taken up.

The appearance of the sample will at once throw suspicion upon it, if any considerable amount of the oil is present. Pure lard is usually white and granular, but the addition of cottonseed oil gives it a creamy color and a peculiar salvy consistency, which when in contact with a glass surface often gives it almost a silky lustre.

The Halphen test for cottonseed oil is carried out as follows: In a small test tube take about 5 cc. of the melted lard and an equal amount of the following mixture: Equal parts of c. p. amyl alcohol and a 1 per cent. solution of flowers of sulphur in c. p. carbon bisulphide. (These two solutions should be kept in separate bottles and mixed only when needed.) Shake the contents of the tube well and immerse in a suitable vessel of *saturated* salt solution, stoppering the tube loosely with cotton. Heat to boiling on a stove or over a gas flame and boil 15 minutes. At the end of this time cottonseed oil will develop a bright crimson color, while pure lard will be unchanged. A very light pink may be due to the presence of fat from hogs fed on cottonseed products, but the deep crimson is unmistakable. (*Caution:* The chemicals used are inflammable.)

VINEGAR

The State standards for cider vinegar are a minimum of 2 per cent. solids and 4 per cent. of acid. Bring sample to 60° F. and take the Quevenne lactometer reading, as in the case of milk. (Whenever a liquid has been cooled always shake well just before taking the specific gravity.) A

vinegar reading under 16 is suspicious. Either its solids are near or below the minimum or its alcohol is high (and the acid probably low). The correction for temperature is .12 of a unit for 1° F., but the liquid should not be warmer than 70° F. for accurate work. All specific gravity readings should be taken between 60° F. and 70° F.

To test for the amount of acid, first make up a saturated solution of quick lime by shaking about a quart of rain water with fine lime at intervals for several hours and then letting it settle clear. Enough lime should be used to still leave quite an excess in the bottom. Measure out 3 cc. of the sample into a 300 cc. Erlenmeyer flask and add 50 cc. of water and 3 drops of a 10 per cent. solution of phenolphthalein in alcohol. Run in from a 50 cc. pipette exactly 50 cc. of the filtered lime water and shake thoroughly. If a permanent red color persists the vinegar probably has under 4 per cent. of acid. If the color does not change, the sample is up to standard.

To a couple of inches of the sample in a test tube add 5 drops of a 20 per cent. solution of lead acetate, and shake. A heavy flocculent precipitate soon settling out indicates a pure cider vinegar. No precipitate or merely a cloudiness is a suspicious indication.

Shake about 3 inches of vinegar in a large test tube with enough fuller's earth to make it quite thick and filter into another test tube. If nearly all the color has been removed caramel color may be suspected. If only about half or less, the sample is probably uncolored.

TURPENTINE

Mineral oil seems to be the chief adulterant here.

Shake about 1 inch of the sample in a small test tube with an equal amount of analine oil. On standing the analine will settle out in a layer at the bottom if considerable amounts of mineral oil are present; otherwise the solution will remain perfectly clear. If when shaken vigorously the bubbles hold on the surface, or there is a "bead," as we say, it is an indication of petroleum products (mineral oil), though not a sure one.

Take the specific gravity of the sample, cooled to 60° F.,

with a hydrometer reading between .800 and .900. Anything under .862 is suspicious. The correction for temperature is .00046 for 1° F.

Polymerization Test. This is by far the best and most important test on a turpentine, for it will detect much smaller amounts of mineral oil than any other. Cautiously mix in a glass-stoppered bottle 2 parts, by measure (say 200 cc.), of c. p. concentrated sulphuric acid with 1 part (100 cc.) of c. p. fuming sulphuric acid containing 15 per cent. of sulphur trioxide. Add slowly and cool with running water on the outside of the bottle in case it gets warm to the touch. (*Caution:* Do not let the fuming acid come in contact with water, or with the clothes or flesh, as it is *very* active. If a drop does touch the skin wash off at once with a *large amount* of water.) Carefully pour into a Babcock milk bottle, by means of a lipped beaker, enough of the acid mixture to half fill the bottle and place same in ice water. When cold run in from a 5 cc. pipette exactly 5 cc. of the sample, letting it run slowly down the side of the bottle. Shake *very cautiously* with a rotary movement, cooling when the glass becomes hot to the touch. When thoroughly mixed give a final shaking, place in a vessel of cold water and heat same to 120° F., shaking the bottle at intervals. Let cool, fill to upper third of scale with ordinary concentrated sulphuric acid (Babcock acid) and whirl 5 minutes in the centrifuge, or let stand all night. Read the top layer. If it is clear and thin and reads over 0.4 per cent. mineral oil is present; if it is straw colored and very thick and reads about .4 per cent. or under the turpentine is probably pure.

Caution: The shaking must be *very gradual*, or much turpentine will be lost by boiling away and the sample may even froth out of the bottle. One cannot be too careful in handling the fuming sulphuric acid or breathing its choking fumes. Never leave the stopper out of the acid mixture any longer than absolutely necessary, as it rapidly takes up water and becomes weaker.

LINSEED OIL

Here also mineral oil is a frequent adulterant.

The flash point determination is perhaps the best simple test. Fill a 50 cc. porcelain crucible with the oil to $\frac{1}{4}$ inch of the top and heat over a Bunsen (gas) burner with about an inch of flame. Suspend a Fahrenheit thermometer reading to 600° from above, in such a manner that it comes nearly to the bottom and is in the center of the crucible. For rough work the temperature can rise 10° or even 20° a minute, and at every 10° or oftener the oil may be tested with a lighted splinter or match. The oil usually begins to smoke quite strongly before it flashes. At the flash point a blue flame will shoot across the entire surface and perhaps a very slight "pop" will be heard. Take the reading on the thermometer and turn off the gas. A flash at less than 500° F. is suspicious, as most pure oils will flash between 500° and 600° F. by this very rough method. Most adulterated oils will run below 300° and some even below 100° F.

Take the specific gravity of the oil in the usual manner, with a hydrometer whose range is .900 to 1.000. Have the oil as near 60° F. as possible, as temperature corrections of more than 10° F. are not very satisfactory. The linseed oil correction is .00036 for every degree Fahrenheit. Any oil, whether raw or boiled, reading below .932 is suspicious, the limits for pure raw oil being .932 to .937, while boiled oil may run as high as .942. Most adulterated oils are lighter than pure ones, so it is seldom that the upper limit is exceeded.

The analine test described under turpentine is sometimes of value. Use about twice as much analine as linseed oil and regard anything but an absolutely clear mixture with suspicion.

MOLASSES

To detect sulphur dioxide, the chief adulterant in New Orleans molasses, cover the bottom of a 200 cc. Erlenmeyer flask with the sample, add half a dozen pieces of c. p. granulated zinc and 50 cc. of a mixture of equal parts of c. p. concentrated hydrochloric acid and water. Shake well and stopper

loosely with a cork covered with a filter paper moistened with 20 per cent. c. p. lead acetate solution. A black stain on the paper shows sulphur dioxide to be present. If the gas does not bubble off briskly add a little of the concentrated acid and warm cautiously. If the liquid foams up against the cork before any stain is observed, repeat, using less molasses.

Glucose is seldom found, but may be detected by the peculiar bland taste, as in the well-known "corn syrup."

SYRUPS

A substance composed of cane syrup and glucose may be sold under the name of syrup, providing the container plainly shows that the article is a mixture or blend and each ingredient is named. Adulteration of cane syrup with glucose is now very rare in this State unless the original container shows by label or brand that glucose is a constituent. It may be detected by the taste or, when in considerable amounts, by Allen's test. (See Honey.)

MAPLE SYRUP

This substance is quite frequently adulterated in this State, cane sugar products being most commonly used. Glucose is not so common. The taste here is a valuable guide, some of the adulterated samples having scarcely any of the much-prized maple flavor and tasting more like cane syrup.

The malic acid test which is quite valuable is carried out as follows: Measure out 5 cc. of the syrup into a 200 cc. beaker, add 15 cc. of water and dissolve by rotating carefully. Add 2 drops of strong c. p. ammonia, 20 drops of a 10 per cent. solution of c. p. calcium chloride and 60 cc. of 95 per cent. grain alcohol, stirring after each addition. If after a final vigorous stirring a rather heavy flocculent precipitate forms, the syrup is probably pure. A clear or only slightly cloudy solution at this point is a suspicious indication.

HONEY

Comb honey is seldom adulterated, though it may have been made by feeding the bees sugar, the chemical detection of which is quite complex.

Strained honey may rarely be adulterated with glucose, which can usually be told by the taste. Invert sugar when added is difficult to detect.

Allen's test for glucose in honey is sometimes used: Dissolve about 20 cc. of honey in an equal amount of water in a small beaker and add wood alcohol with constant stirring, until there is a permanent turbidity. If glucose be present a heavy gummy precipitate will soon form, while pure honey gives only a slight milkiness.

CANDY

Place a piece in a beaker of water and dissolve with frequent stirring. If the color dissolves readily it is probably an analine dye, and many of these are allowable. If it settles out it may be a harmful metallic color. Any marked white, gritty sediment may indicate terra alba, barytes or some other illegal make-weight substance.

Arsenic. Candies with a shiny gloss on them may contain arsenic which is sometimes present in the shellac used to coat them. Use the same apparatus and procedure as under sulphur dioxide in molasses, but use special arsenic-free zinc and hydrochloric acid, and wet the filter paper with saturated bichloride of mercury solution instead of lead acetate. (*Caution:* Bichloride is extremely poisonous.) A yellow stain indicates arsenic.

JAMS, JELLIES, ETC.

Glucose. This is detected by the taste.

Starch. Place an inch of the material in a large test tube and dissolve in double the amount of water. Heat to boiling, cool and add a few drops of iodine solution. A deep blue color shows the presence of starch.

Analine Dyes. Dissolve in water as above and boil separate portions in a small porcelain crucible or a test tube with bits of pure white (not cream colored) *woolen* cloth, one portion as made up, one with a few drops of hydrochloric acid and one with a few of ammonia. Any bright permanent color on the cloth indicates a coal tar dye. Fruit colors leave only a dull stain.

EVAPORATED APPLES

The practiced eye can tell if the sample is very far above the 27 per cent. State standard for moisture. The apples should also be carefully examined for wormy and decayed fruit.

FIGS

Here again one should look out for black, decayed and worm-eaten fruit. We have also found mites (small lice) on several samples.

CLEANED CURRANTS

Many of these are "cleaned" only in name. Sticks, stones, stems and even manure have been frequently found. A hand glass will aid in all the fruit examinations.

HAMBURG STEAK AND SAUSAGE

These may well be taken up together, as their adulterants are the same. Sulphites are the most common adulterant of hamburg and pork sausage, while starch "filler" comprises the bulk of adulteration in bologna and other sausages.

Sulphites. Proceed as in sulphur dioxide in molasses, covering bottom of flask with small pieces of the meat. If a one-hole cork and a bent glass tube are available, a more satisfactory method than using filter paper is to pass the gas directly into a test tube of the lead acetate solution. A black precipitate will then form if sulphites are present. Pure meat gives a *slight* indication of sulphites, so it is best to try the test out thoroughly before use.

One will soon learn to suspect a meat of containing sulphites if it remains a bright red for some days, as unpreserved meat quickly darkens.

Starch. Proceed as in the case of jams and jellies, pouring off the hot water from the meat before cooling and adding the iodine solution to the former.

Nitrates. Proceed as in milk, using a piece of meat the size of a pea. Potassium nitrate (saltpeter) is not usually regarded with such disfavor as most preservatives.

Borax. This is no longer very common. Cover the bottom of a small beaker with meat, cover with warm water containing a few drops of hydrochloric acid and warm 5 minutes, shaking frequently. Stick a piece of turmeric paper to the inside of the beaker and leave it partly immersed in the liquid for 15 minutes. Remove and let dry. A rose color, turning green or blue under a drop of ammonia, indicates the presence of borax or boric acid.

FLOUR

Corn and buckwheat flours are the two cheap flours that most frequently masquerade under other names, mainly as wheat.

Corn can be detected by the eye, or better with a good hand glass, on account of its yellow outer covering, while buckwheat makes itself known by the minute particles of its black hull.

Vogel's Method. Mix 95 parts of 70 per cent. alcohol and 5 parts of hydrochloric acid. Place an inch of flour in a small test tube, fill half full with above mixture and shake well. Heat to boiling and let settle (*Caution:* The alcohol is inflammable). An orange-yellow color in the clear liquid indicates corn; a green color, buckwheat flour.

OLIVE OIL

Cottonseed oil is by far the most frequent adulterant. One will soon get to know it from its taste, for it seems to stay in the mouth and on the tongue longer than pure olive oil, leaving a greasy feeling for some time. Cottonseed oil alone is almost without flavor.

Halphen Test. Run this in exactly the same way as for a lard. Since we are here dealing with an oil, it will mix directly with the testing solution without any preliminary heating.

Nitric Acid Test. Place about an inch each of the oil and concentrated nitric acid in a small test tube and shake thoroughly. Let settle, when the oil will be greenish-yellow color if pure, and a reddish-orange or brown if a foreign oil be present. A pure oil on *long standing* may turn brownish.

PICKLES

Alum. An indication of alum, though not an absolute proof, would be given by the behavior of the liquid containing the pickles. To 2 inches of the vinegar in a test tube add a little ammonia (half an inch) and shake. A flocculent precipitate may indicate alum. Take about 50 cc. of the vinegar in a small beaker, heat to boiling and add 5 cc. of 10 per cent. c. p. barium chloride solution. Boil 5 minutes and let stand. If a noticeable amount of heavy white precipitate settles out, alum may be present.

A more satisfactory, but also more difficult, test for alum in pickles is as follows: Fill a crucible nearly full of finely-cut pieces of pickle. Heat over a low Bunsen flame until the contents are reduced to a white or gray ash. (This may take two or three hours.) Add enough c. p. sodium carbonate to make a layer about a quarter of an inch deep on the bottom of the crucible. Stir thoroughly, melt over a hot Bunsen flame and continue heating for fifteen minutes. When cool place in a small beaker, fill one-third full of water and boil for five minutes, or until the contents are loose from the crucible. Filter, add half a spoonful of ammonium chloride (sal ammoniac), heat to boiling and boil 15 minutes longer. A white flocculent precipitate at this point proves the presence of aluminium salts (alum).

Copper. Char thoroughly some of the finely-cut pickles in a porcelain crucible over a Bunsen flame. Let cool and wet with nitric acid. Add water, boil and filter. Add a little ammonia to the filtered liquid. If copper be present it will turn blue. This may also be used on peas which have been "greened" by copper.

MUSTARD

Foreign starch and turmeric are the chief adulterants.

Starch. This is detected in the usual way as in meat and jams.

Turmeric. Place an inch of the mustard in a large test tube and shake with 2 inches of grain alcohol. If the alcohol is

colored quite yellow, soak pieces of filter paper in it in the same manner as in borax in meat and dry them. Then soak them in a saturated solution of boric acid again, letting the end stick out from the liquid. If on drying a rose red color develops, turning green or blue with a drop of ammonia, turmeric is probably present. It will be noticed that this is the reverse of the test for borax in meat.

HORSE RADISH

This is frequently preserved with sulphites to prevent its darkening at the surface, where it is exposed to the air. In fact, any sample of horse radish not darkened at the surface is suspicious.

Test for sulphites as in meat and molasses.

Turnip is sometimes added and this will, of course, greatly decrease the pungent taste.

SPICES

These do not seem to be as grossly adulterated in this State as the textbooks might lead us to suppose. The microscope is the best means of detecting spice adulteration.

Cereal products constitute an adulterant common to all spices, but obviously the only time a starch test would be of any value would be when the spice itself did not contain starch. For cloves and the red peppers, (cayenne, paprika, etc.), the only two ordinary spices containing no starch, the usual test for starch adulteration may be used.

Ginger sometimes contains turmeric to give it pungency. The method of testing is identical with that for mustard.

Pepper sometimes contains ground olive stones. Place a little in a white dish and cover with a mixture of 1 part analine and 3 parts acetic acid. Pepper is colored gray and olive stones yellowish-brown by this treatment.

COFFEE

Pea products and chicory are the chief adulterants of ground coffee. Whole coffee is seldom adulterated, for it is very hard to counterfeit the appearance of the coffee bean so that it

cannot be detected at a glance. It is well, however, to be on the lookout for such adulteration.

Place 2 inches of ground coffee in a large test tube and fill the tube nearly full of cold water. Shake thoroughly and let stand. In general pure coffee will float, because of the oil in it. Its adulterants, having little or no oil, will sink. Any considerable amount of material on the bottom is suspicious. The upper portion may be poured off and the sediment tested for starch in the usual way.

TEA

"Lie tea," made from stems and dust, may be detected by soaking it in hot water, when the fragments will fall apart. Pure tea when treated in this way softens so that the leaves may be unrolled and examined. Foreign leaves may thus be detected. Green tea is sometimes "faced" with Prussian blue. A method for its detection is given by Mr. Fred West in the *July Journal of Industrial and Engineering Chemistry*. The tea is finely ground in a mortar and sifted through a 20-mesh sieve upon a large filter wet with oxalic acid solution and spread smoothly on a glass plate. Place another glass plate on top and dry at a gentle heat. Examine with a hand glass, when blue spots will show the presence of Prussian blue. By the aid of a hand glass the Prussian blue may often be actually seen as small blue crystals on the tea as purchased.

VANILLA

Avoid products labeled "Compound," "Vanillin," "Tonka" and the like, if you wish a pure vanilla extract. The taste of vanilla is a valuable criterion of its alcohol content, and one soon learns also to detect the harsh burning flavor of cumarin, the active principle of the tonka bean, so often used as a substitute for the more highly-prized vanilla bean. Vanillin, the active principle of the latter, has a smooth, more agreeable taste. A low alcohol content usually, though not always, means an artificial vanilla. With a little experience 30 to 50 per cent. of alcohol can be told by its well-known

burning taste. Use only a few drops of the sample in tasting, as it is not well to take too much vanilla into the system.

Take 25 cc. of the sample in a 200 cc. beaker, add 50 cc. of water and boil off to one-third the former volume. Add a few drops of hydrochloric acid, stir and let stand. The resins will settle out and their amount can be judged. Little or no resin will usually indicate an artificial vanilla; a large amount, a pure one.

Filter off the resins, save a little of the liquid in a small test tube for comparison and shake the rest in a test tube with fuller's earth, as in testing vinegar for caramel. Filter, and if considerable color has been lost, caramel is probably present; if scarcely any color is lost, caramel is doubtless absent.

LEMON EXTRACT

To be a high grade product, containing a high percentage of lemon oil, an extract must be very high in alcohol (80 per cent. or over); hence the taste is a good guide.

Dilute 2 inches of the sample in a test tube with an equal amount of water and shake. Lemon oil will form a dense white opaque solution. A clear or only slightly cloudy solution indicates little or no lemon oil.

Color. Boil bits of white wool in the extract in the same way as with jams and jellies. A permanent yellow color on the wool indicates coal tar dyes. The color is usually fixed without the aid of ammonia or hydrochloric acid.

To a little (an inch) in a small test tube, add 2 or 3 drops of concentrated hydrochloric acid. A partial or complete fading of the yellow color or a change to pink indicates a coal tar dye.

CANNED GOODS

As there are no simple practical tests for preservatives in canned goods these will not be taken up. It sometimes happens that when vegetables, etc. are slightly decayed or fermented when canned, gases accumulate in the can, causing it to swell. Such goods, commonly known as "swells," should not be used as food. Often, however, the pressure is relieved

by puncturing the can, which is again hermetically sealed with a second drop of solder. Two drops of solder, therefore, on the end of a can may be looked upon with suspicion.

It often happens that acids in fruit or vegetables will attack the tin of the can, thus mingling tin salts with the contents. Since salts of tin, lead, etc. are quite poisonous, this is not a desirable condition. Such action on the tin will be made known by deep pits in the surface or by patches of very bright metal, since the tin will normally be darker in color from long contact with the contents of the can.

GENERAL DIRECTIONS

A few directions for performing some of the more difficult operations and using some of the less familiar pieces of apparatus involved in the various tests are appended. The writer realizes that many processes which may seem quite simple to a man of scientific training appear difficult at the first attempt, and it is hoped that these brief directions may be of real assistance to the reader.

MAKING UP SOLUTIONS

Distilled water is best to use, though rain water or drippings from a steam cock will do. A 20 per cent. solution of a solid is made by weighing out (say) 20 grams of the substance and adding 80 cc. (grams) of water. The 70 per cent. alcohol is made by measuring out 70 cc. of 95 per cent. alcohol and adding enough water to make 95 cc. Iodine is best dissolved in water by the aid of a little iodide of potassium. When mixing sulphuric acid and water always pour the acid into the water and mix in a beaker or other thin glass dish.

KEEPING SOLUTIONS

Make up enough of each solution to last for some time. Place in the glass-stoppered reagent bottles and label plainly with gummed labels. The lime water is kept in the 1-liter (quart) bottle.

THE BALANCE

The weights should be metric, that is, grams and fractions, not ounces, etc. Cover the pan with a piece of filter or other paper when weighing out chemicals. Weigh liquids in a beaker. The paper or beaker must, of course, be balanced first. In careful weighings, as weighing out a cream sample for instance, avoid all air currents.

THE BUNSEN BURNER

This can be fastened to any gas cock by means of a rubber tube. Leave the holes at the bottom open for a hot flame and regulate height with the cock. The hottest portion is near the tip of the flame. Use the tripod and gauze for heating glassware. The crucible is supported for heating by the tripod and triangle.

FILTERING

To use a filter fold tightly in half, then in quarter, and place in funnel with one layer of paper on one side and three on the other. Into this inverted cone pour the liquid to be filtered, after placing the funnel in the neck of an Erlenmeyer flask or a test tube to catch the liquid.

DROPPING LIQUIDS

A small glass tube is convenient for this purpose, though a pipette does very well.

APPARATUS AND CHEMICALS

A list of the apparatus and chemicals, with approximate cost, is here given to aid in ordering. The amount of each needed is also given, so that the cost may be minimized as far as possible.

AMOUNT NEEDED		APPROXIMATE COST
1	Lactometer, Quevenne:	
	Without thermometer	\$0 75
	With thermometer	1 75
2	Cylinders of heavy glass with enlarged top 14" high; diam. body, 1½"; diam. top, 2", each.....	40
1	Babcock Test Outfit, including centrifuge, milk, cream and skim milk bottles, pipette, acid measure, brush, small lactometer, thermometer, acid, directions and carrying case, complete .	9 00
	Concentrated sulphuric acid may be purchased of any druggist provided it tests 1.82 to 1.83 on the hydrometer..	
1	Hydrometer ("Acidometer") for same with cylinder..... (The above are perhaps best ordered of some house making a specialty of dairy supplies.)	70
	Test Tubes of best German glass	
12	Small (4"×½"), doz.	15
12	Large (8"×1"), doz.....	60
2	Funnels, glass, angle of 60°, stem ground to a point, each...	09
100	Filters, white, circular, ordinary quality, diam. 3½", per 100.	10
12	Reagent Bottles, half pint, ground-glass stoppers, plain, doz.	2 25
1	Reagent Bottle, quart, as above, each.....	50
	Flasks, Erlenmeyer:	
3	2 oz., each	11
3	6 oz., each	18
3	8 oz., each	20
	Cork Stoppers to fit, each.....	01
	Pipettes, volumetric, accurately graduated:	
2	3 cc., each	14
2	5 cc., each	18
2	50 cc., each	40
	Hydrometers, for scientific use, specific gravity scale only:	
1	.800 to .900, each.....	1 00
1	.900 to 1.000, each	1 00
	Crucibles, porcelain, glazed throughout:	
2	17 cc., each	23
2	50 cc., each	35
	Beakers, Griffen's low wide shape, with lip, best Bohemian glass:	

AMOUNT NEEDED		APPROXIMATE COST
3	2½ oz., each	\$0 10
3	8 oz., each	18
1	Bunsen Burner, cheap grade, each.....	25
	3 ft. rubber tubing for same.....	10
1	Thermometer, chemical, graduated up to 600° F., each.....	1 50
1	Same, with two scales, engraved on the stem (100° C./ 212° F.), each	1 60
2	Cylinders, lipped, graduated in cc., capacity 100 cc., each.....	60
1	Wire Gauze, iron, 14 mesh, sq. ft.....	28
1	Tripod, iron, plain, 5" diam., each.....	25
2	Triangles, pipe stem covered, medium, each.....	05
2	Rubber Stoppers, one hole, diam. large end 25mm., No. 4, each	25
12	Stirring Rods, glass, doz.....	10
1	Balances, with metric weights.....	\$5 and up

Chemicals

1 oz.	Ferric Chloride, C. P., oz.....	\$0 10
1 lb.	Sulphuric Acid, 1.84, C. P., lb.....	15
1 oz.	Diphenylamine, C. P., oz.....	20
1 oz.	Mercury, Metal, oz.....	15
1 lb.	Nitric Acid, 1.42, C. P., lb.....	15
1 oz.	Iodine, Resublimed, C. P., oz.....	35
1 lb.	Ether (Sulphuric), Washed, lb.....	37
1 can	Alcohol, Ethyl (Grain), 95%, can.....	25
1 lb.	Acetic Acid, Glacial, 99.5%, lb.....	25
1 lb.	Hydrochloric Acid, 1.20, C. P., lb.....	15
1 lb.	Potassium Hydroxide, C. P., by alcohol, lb.....	55
1 lb.	Alcohol, Amyl (Fusel Oil), lb.....	35
1 lb.	Carbon Disulphide (Bisulphide), C. P., lb.....	40
1 lb.	Sulphur, Sublimed (Flowers), lb.....	10
4 oz.	Lead Acetate, C. P., oz.....	10
1 oz.	Phenolphthalein, Pure, oz.....	25
1 lb.	Fuller's Earth, lb.....	10
4 oz.	Aniline (Oil), Pure, oz.....	10
1 lb.	Sulphuric Acid, Fuming, C. P., 15%, SO ₃ , lb.....	25
1 lb.	Alcohol, Methyl (Wood), Purif., lb.....	20
1 lb.	Ammonium Hydrate (Ammonia), .90, C. P., lb.....	15
4 oz.	Calcium Chloride, C. P., Cryst., oz.....	10
7 oz.	Zinc, Gran., Special, Arsenic-Free, oz.....	10
1 lb.	Hydrochloric Acid 1.20, C. P., Special Arsenic-Free, lb.....	15
1 oz.	Mercuric Chloride (Bichloride), C. P., oz.....	15
1 oz.	Picric Acid, C. P., oz.....	20
Bottle	Turmeric Paper, Strips, bottle.....	10
1 oz.	Barium Chloride, C. P., oz.....	10
1 oz.	Boric Acid, Cryst., C. P., oz.....	10
1 oz.	Oxalic Acid, Cryst., C. P., oz.....	10

The approximate cost of the apparatus will be around \$33 and that of the chemicals around \$7, making a total of \$40. Very common things, as cups, white wool, etc. have not been included in the list as they can be secured anywhere. Many common chemicals as alcohol, ether, bichloride, iodine and the acids can often be bought in sufficiently pure form of the local druggist.

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STATE OF NEW YORK
DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Bulletin 41

Wart Disease of the Potato

Prepared by

GEORGE G. ATWOOD

Chief, Bureau of Horticulture and Nursery Inspection

NOTE.—The information in this bulletin is taken from Farmers' Bulletin 489 and Circular No. 52, Bureau of Plant Industry, U. S. Department of Agriculture.

The technical information and illustrations are from Bulletin 63 and Circular No. 1, Central Experimental Farm, Ottawa, by Dr. H. T. Gussow, Dominion Botanist.

SWORN STATEMENT

The publication of the following statement is required by act of Congress August 24, 1912:

The Department of Agriculture Bulletin is owned and published by the New York State Department of Agriculture, Albany, N. Y.

CALVIN J. HUSON,
Commissioner.

Sworn to and subscribed before me this 30th day of September, 1912.

JOHN H. GRANT,
Commissioner of Deeds.

OFFICIAL NOTICE

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

ALBANY, *November 15, 1912.*

To whom it may concern:

Records in this office show that a contagious plant disease known as potato wart, potato canker, black scab, etc., new to and not prevalent or distributed within and throughout the State of New York exists in the following countries, viz.: Newfoundland; the islands of St. Pierre and Miquelon; Great Britain, including England, Scotland, Wales and Ireland; Germany and Austria-Hungary.

Now, therefore, under the provisions of sections 304 and 305 of the Agricultural Law, I hereby declare that it is necessary in order to prevent the introduction and spread within the State of New York of the disease known as potato wart, potato canker, black scab, etc., to forbid the bringing into the State of New York for seeding purposes and also to forbid the planting within the State of any potato tubers grown in the above named countries.

CALVIN J. HUSON,
Commissioner of Agriculture.

WART DISEASE OF THE POTATO

INTRODUCTION

The object of this compilation with illustrations is to invite the attention of potato growers in New York State to a comparatively new disease of one of our most important crops. The disease has not appeared in the United States but it is so widely distributed in other countries that its destructive character is well known.

Reports are of such a nature as to cause much alarm. That the disease, wherever established, is very virulent and practically uncontrollable is generally believed, and strenuous efforts should be exerted to prevent the introduction of diseased seed potatoes into this State.

A full crop of potatoes in the State of New York approaches nearly 50,000,000 bushels. The potato wart disease could easily cause a loss of many millions of dollars in a year, and also cause still greater loss by rendering the soil unfit to produce a crop of potatoes for several years. The disease is carried over in the soil and no remedy is known.

The information in these pages has been collected from all sources available and is considered reliable.

Special attention of growers and importers of potatoes is called to the danger of the disease gaining a foothold in the State. All cases should be reported promptly to the Commissioner of Agriculture at Albany and the co-operation of all persons interested should be active.

DESCRIPTION OF THE DISEASE

The disease, which has been known as "warty disease," "black scab," "canker," and "cauliflower," is one which attacks the tuber principally, and consequently is not observed until harvesting time. In a bad attack of the disease, big, dark, warty excrescences, sometimes as large as the tuber itself, appear on its sides or ends. "The growth consists here of a mass of coral-like or more or less scabby excrescences or nodules, similar in appearance to the well-known crown or root gall of apples. The adherent earth can be easily washed off when the character of the

growth becomes more apparent. It is not spongy and not detachable from the tuber. It is of a somewhat lighter color at the base and dotted with minute rusty-brown spots over the surface.

* * * In an advanced stage the tubers are wholly covered by this growth, having lost every resemblance to potatoes. They are lumps of irregular outline, never spherical or oblong, but simply a mass of ragged and edged excrescences. * * * A still more advanced stage occurs when the fungus has utilized every particle of food stored in the tuber and has reduced it to a brownish-black soft mass giving off a very unpleasant putrefactive odor. This is the most dangerous stage of the disease, and the tubers which have reached it can not be harvested whole. They break in pieces, and thus the brownish, pulpy mass, consisting almost entirely of spores of the fungus and remains of the cell walls of the potato, is broken up, the spores are liberated in millions, and the land is badly infected for years." (Güssow, 1909.) (See Figs. I and II.)

In a mild attack the eyes first appear grayish, then turn brown, and finally black, while in a healthy tuber these are whitish or purplish in color. The tuber is only slightly disfigured and its keeping qualities do not seem to be impaired.

While the tuber is the part of the plant chiefly affected, infection may take place in all the young tissues of the plant, the roots, stolons, stems, and even the leaves.

THREATENING NATURE OF THE DISEASE

All reports indicate that the potato wart is one of the most serious of all known diseases of the potato. It converts the tuber into an ugly, irregular, and utterly unsalable growth. When established in a field it may affect the entire crop, and the land remains so infected that potatoes can not be successfully grown for six or more years.

We quote from writers abroad the following:

J. W. Eastham (Yearbook, College of Agriculture and Horticulture, Holmes Chapel, 1904): "When once established in the land it is useless to grow potatoes again until the pest has been starved out or otherwise destroyed; but so far as is known no other crops are liable to be attacked. Quite the worst case seen in



FIG. 1.— POTATO WART. A plant of a diseased potato as it appears when dug, showing in the center a partially sound tuber covered with excrescences caused by the fungus at the base; also showing six malformed tubers adhering to the plant. (After Güssow.)

Cheshire occurred on land that had not borne potatoes for six years; 'seed' from the same source as that employed on this land yielded satisfactory results elsewhere, indicating that spores were not introduced by the seed, whilst the manure employed started no infection elsewhere. This indicates prolonged vitality on the part of the fungus, which would render starving out a very tedious process."

E. S. Salmon (*Gardeners' Chronicle*, 1907): "It is quite clear, however, that the 'black scab' disease threatens to inflict such serious injury on the potato crop as to warrant the Board of Agriculture taking official action. * * * The disease is viewed with alarm by both the scientific and the practical man, and yet no steps are being taken to deal with this pest which, if it is allowed to spread through the country and to reach Ireland, will cause losses of hundreds of thousands of pounds."

Borthwick (1907), referring to an outbreak in Scotland, says: "The whole crop was damaged to the extent that they could not be used. They were quite useless, the early varieties being, if anything, worse than the late, especially the early kidneys. The disease was first noticed when the new potatoes began to form. It first appeared on the stems as a greenish-looking canker, which attacked the tubers as they grew and soon made them a mass of corruption."

M. C. Potter (*Gardening*, 1908): "From all accounts the disease is spreading rapidly in the infected areas and the amount of damage is yearly increasing. * * * In certain allotments * * * it has been found impossible to grow potatoes."

John Percival (1909): "Potato wart has already become a serious trouble in many districts in this country, and it is likely to develop into the worst pest with which the grower will have to deal unless vigorous measures are adopted to stamp it out."

T. Johnson (1909): "It needs only a very casual acquaintance with the facts of the case in the British Isles from the time of the discovery of the trouble by Potter in 1902 to the present time to warn one of the necessity of taking all possible steps to stamp out a disease which may become as serious as ordinary leaf-blight and less amenable to treatment. * * * It is now found in many districts in England, Wales, and Scotland. It is

often so pronounced as to destroy the whole crop, and it is not confined to garden plots. Warty tubers are naturally poorer in food matter than healthy ones, and when not destroyed in the field do not keep well in store. They ought to be destroyed as soon as found, and on no account saved for seed."

The Gardeners' Chronicle, (1908): "This disease * * * is exciting some alarm in Germany, where it is said to be spreading. It appears to have been recognized as of local occurrence for some time in the neighborhood of Düsseldorf, Elberfeld. * * * During this season it has proved so injurious as to have entirely destroyed the crop in many gardens where potatoes have been raised year by year."

Dr. O. Appel (1908), on the other hand, says: "According to reports of Spieckermann, Schneider, and Jösting, who have observed it this year in Germany, the disease is not of economic importance."

The British Board of Agriculture and Fisheries made it a notifiable disease in 1907 under the Destructive Insects and Pests Acts, 1877-1907. The following report (Gardeners' Chronicle, 1909) was made: "The board of agriculture and fisheries desire to notify that 244 cases of wart disease or black scab in this year's potato crop had been reported to them up to October 3. These cases have occurred in the following countries: Shropshire, 60; Staffordshire, 57; Lancashire, 50; Cheshire, 30; Warwickshire, 25; Worcestershire and Leicestershire, 4 each; Derbyshire, 3; Merioneth, 2; and 1 each in Perthshire, Stirlingshire, Dumfriesshire, Cumberland, Nottingham, Berkshire, Flintshire, Breckenshire, and Glamorgan. A few cases among field crops have been found in the counties in which the disease is most common, but in the great majority of cases the disease has occurred on allotments or in gardens in which potatoes are constantly grown * * *. The disease has been known in certain districts for ten to fifteen years, and as growers have taken no steps to check its progress, it is now causing serious loss * * *. All cases of wart disease must be notified to the secretary, board of agriculture and fisheries * * *. In the case of farmers who sell 'seed' potatoes, notification of the disease is of especial importance, and failure to notify must be regarded as a serious offense

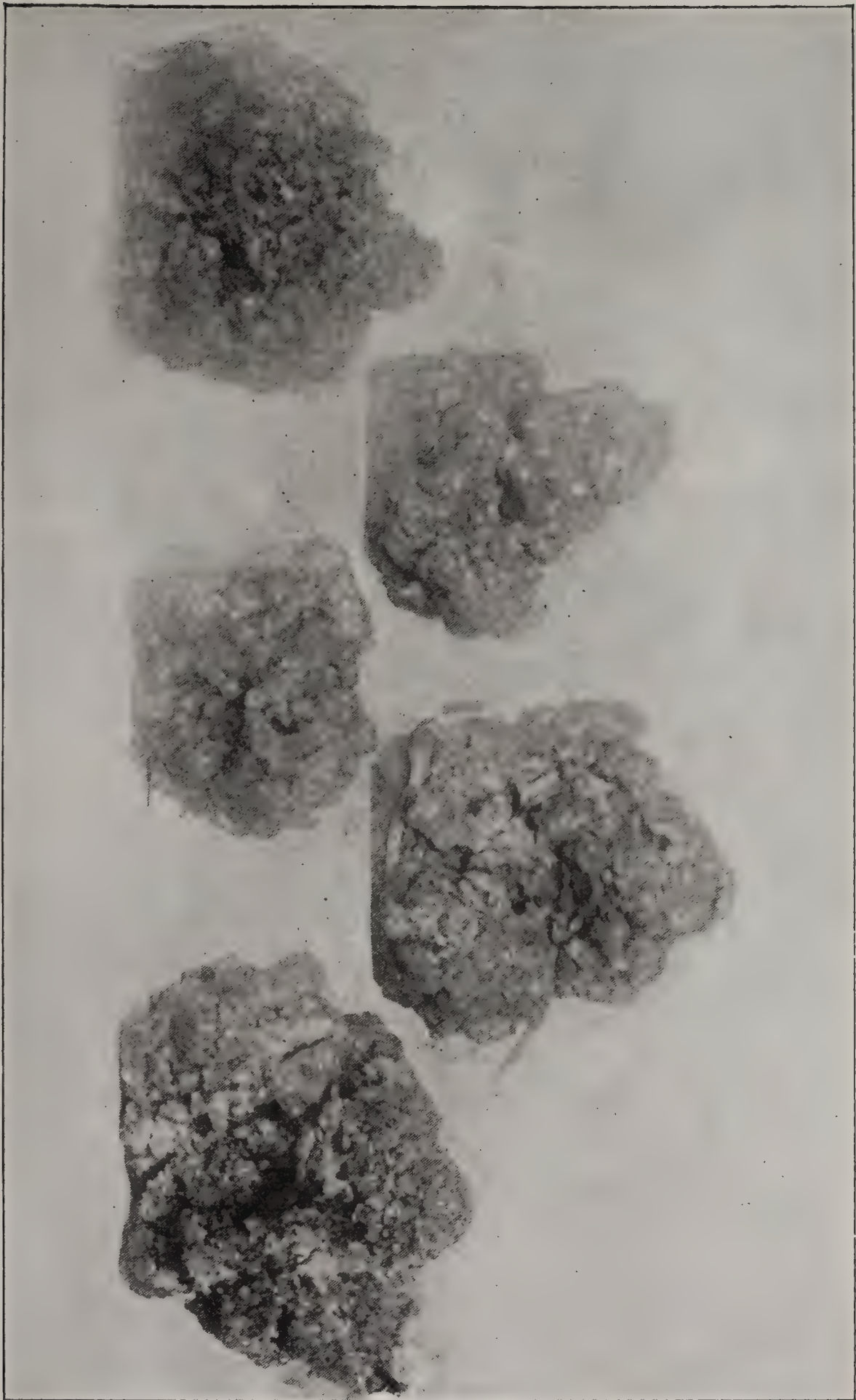


FIG. 2.— SHOWING FIVE OF THE SEVEN BADLY INFECTED POTATOES IN FIG. 1.

* * *. Persons concealing wart disease are liable to prosecution and a penalty of £10."

PRESENT DISTRIBUTION OF THE DISEASE

The disease has been reported from England, from Scotland in Perth, Sterling, and Clackmannan counties; from Ireland in Down County; from Wales; from Germany in Westphalia and the Rhine provinces; and from upper Hungary. It has not yet been brought to the United States so far as known, but has already crossed the Atlantic and become prevalent in Newfoundland, where it was lately discovered by Dr. H. T. Güssow, Dominion botanist, who presented a very interesting paper on the subject in December, 1909, before the American Phytopathological Society. Knowing the serious character of the new pest from personal observation of the losses caused in England, he promptly issued a warning bulletin. The Canadian government has taken active measures to prevent the further introduction of the disease. Doctor Güssow stated that there have been recent importations of seed potatoes from Newfoundland into the United States.

NATURE OF THE PARASITE

The organism causing the disease is a fungus discovered in 1896 in potatoes from upper Hungary by Schilbersky, who named it *Chrysophlyctis endobiotica*. By others the fungus has been supposed to be *Oædomyces leproides*. We quote from the excellent description of Prof. T. Johnson, as follows: "The vegetative form consists of a naked mass of protoplasm which may be distinguished in the host cells (just below the epidermis) by being denser, homogeneous, and finely granular. It may be seen abutting on the host protoplasm, and disputing with it, as it devours it, occupation of the enlarging cell cavity. The protoplasm follows and then the cell wall. This, though brown, does not, like the protoplasm and nucleus, disappear. The starch grains are the last attacked and remain white and uninjured for some time in an invaded cell. The parasitic plasmodium passes from cell to cell by boring its passage through the host cell wall * * *. It is in this stage that it stimulates to active cell division the surrounding host cells and produces the gall or wart. During the

summer the plasmodium rounds up, forming a smooth, yellowish wall about itself. Later the contents of these zoosporangia break up into numerous zoospores, which escape through a hole in the wall and attack healthy potato tissue.

“As the tuber ripens the parasite replaces the summer sporangia by resting ones, which carry the disease through the winter and serve to propagate it in the spring * * *. The resting sporangia, 30–70 μ in diameter, are very numerous in diseased tubers and are easily recognizable with a pocket lens. Under the microscope the wall is seen to be not smooth, but ridged or angular. These brown ridges or bands form part of a kind of epispore which arises as the sporangium ripens, and seems to be formed from the residual contents of the host cell when not also from its cell wall as well * * *. The epispore is thus deposited from without as a third layer on the thickening wall of the sporangium. If this more or less artificial epispore is ignored, then one may speak of the spore wall as smooth * * *. As a rule there is only one resting sporangium in a host cell; occasionally there are two.” It is exceedingly difficult to germinate these resting spores artificially. Professor Johnson succeeded in bringing about germination by placing them in potato juice. He writes: “At last the potato juice, exercising possibly a chemotactic influence, gave success; and sporangia with split walls and escaping zoospores served in the sporangia of certain other Chytridians disturbed during their resting period. Each sporangium contains hundreds or more of less pear-shaped uniciliate zoospores. The zoospores measure from 1.5 to 2.4 μ in diameter. The body is actively amœboid, while the cilium is comparatively passive.” (T. Johnson, 1909.)

Infection takes place usually at the “eyes” of the tuber through the zoospores of either the summer or resting sporangia which are found infecting the surrounding soil. It is also believed by Johnson and others that infection may take place through the internal passage of plasmodia from diseased seed passing through the stolons arising therefrom, and so into the newly-formed tubers.

Since the interest and knowledge of the public must be our main dependence in preventing the establishment of the potato wart in America, it is urged that all importers, dealers, and con-



FIG 3.— POTATO SHOWING INFECTED “ EYES.” OTHER “ EYES ” MAY BE DISEASED.

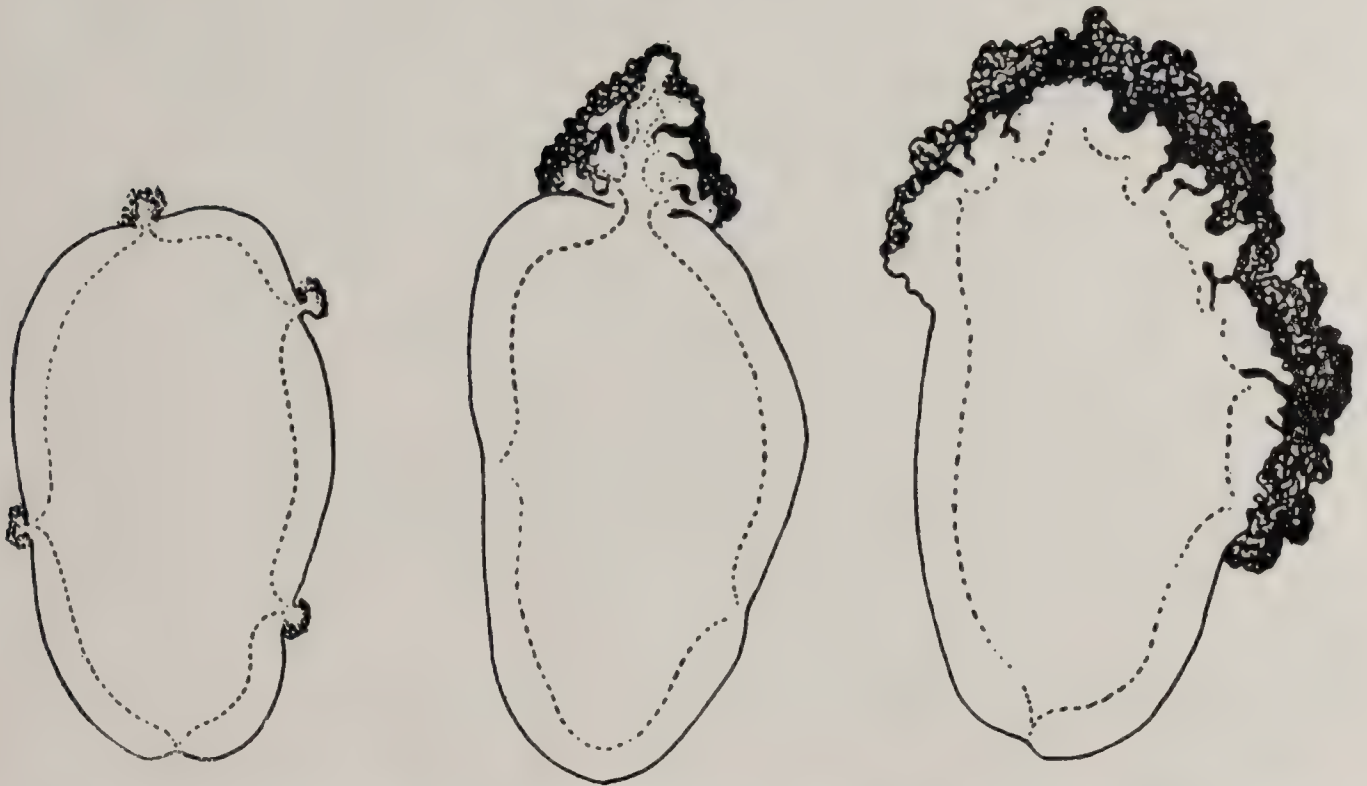


FIG. 4.— POTATOES CUT IN HALF, SHOWING THE WART DISEASE. (AFTER GÜSSOW.)

sumers of foreign potatoes watch for the disease and promptly report to the State Department of Agriculture any cases discovered.

All infected potatoes should be boiled or burned. No part of any lot containing diseased potatoes should be used for seed purposes.

If the disease is found on growing potatoes, heroic measures should be taken to eradicate the trouble by burning the entire lot and planting no more potatoes on that field for six or seven years.

MEANS OF DISTRIBUTION OF THE WART DISEASE

The chief means of distribution of the wart disease is through the use of apparently healthy or only slightly diseased seed coming from infected fields. Such seed entering an uninfected territory is the origin of a new center for distribution. The Harper Adams Agricultural College in a recent bulletin states a case of one consignment of such seed causing the spread of the disease over a district with a 5-mile radius.

Too much emphasis can not be laid on the danger of planting seed taken from areas known to be infected. The danger would be lessened if tubers could be sorted into two lots — one diseased and one not diseased. It is practically impossible to do this, as slightly infected tubers can not be detected even by the most rigid inspection. For this reason various countries have enacted laws prohibiting the importation of any potatoes from infected areas. The United States also has the power of rejecting potatoes from infected districts before the disease makes its entrance and becomes established here.

When the disease once enters a district it is frequently spread to adjoining areas through the use of infected manure. Consequently, diseased tubers should never be fed to stock unless boiled, as the sporangia pass unharmed through the animal. Prof. E. S. Salmon, of the South-Eastern Agricultural College, England, quotes one instance showing the danger of infection by manure. "A certain dairy farmer got one of his fields very slightly infected, but failing to recognize the disease he fed the small and diseased potatoes to cattle. The next year half his potato field was dunged with manure from his own yard, half with artificial

manure. The potatoes manured with his own yard manure were all so badly diseased that he lost four-fifths of his crop; the other half of his field was practically free. As he was feeding his cattle last year in the same way and had turned them out on clover ley [field], he will also have infected a third field."

Poultry and pigs which are allowed to roam over infected areas are another means by which the disease is carried from one field to another. Sporangia may also be carried on men's boots and tools which have not been thoroughly cleaned on coming from infected land.

CONTROL OF THE WART DISEASE

Extensive experiments have been conducted in England with various fungicides and variety tests of potatoes. There seems to be a consensus of opinion that fungicides are not efficacious in controlling the disease. The following chemicals have been used on the soil with unsatisfactory results: Sulphur, soot, quicklime, ground lime, formalin, ferrous sulphate, calcium bisulphate, potassium bisulphite, calcium sulphite, sodium borate, potassium sulphid, copper sulphate, and lead acetate. Experiments were also conducted by sprinkling the sets before planting with sulphur, lime, lime and sulphur, soot, and soot and sulphur with equally unsatisfactory results.

Better results are claimed to have been obtained by testing different varieties of potatoes. A number of varieties have been found to be resistant in England, but one authority maintains that "all the best varieties of potatoes, i. e., all those most profitable to grow, are excluded as susceptible." He also states that one variety said to be immune is very susceptible to late-blight. None of these varieties are of commercial importance in the United States.

At present crop rotation is the best method of dealing with the disease. Unlike late-blight, which is checked some years by climatic conditions, the wart disease when once in the soil grows worse each year on land that is planted to potatoes. Since the fungus has been known to live in the soil for eight years, potatoes should not be planted in that soil during that period. Fortunately, so far as known the fungus attacks no other crop.

A vigorous effort should be made, if found in the United States, to eradicate the trouble. All infected tubers should be boiled or burned, and no more potatoes should be planted on that field for eight years. Stock should not be allowed to run over infected areas, and no part of any lot containing diseased potatoes should be used for seed purposes.

DISTRIBUTION OF THE WART DISEASE

The wart disease was reported first in 1896 by Schilbersky from Upper Hungary. Since then it has been found in Westphalia, the Rhine provinces, and Silesia of Germany; in 1901 in England, where it has spread with great rapidity; and in Wales, Scotland, and Ireland. In 1909 Dr. Güssow reported it from Newfoundland. He also records its appearance in Scandinavia, France, and Italy.*

DAMAGE IN ENGLAND

The disease has been more widespread and destructive in England than in any other country. Under the destructive insects and pests acts, the Board of Agriculture and Fisheries made inspections of various districts in which the wart disease was present in gardens and published their findings in their annual report for 1909-10. The seriousness of the disease in some of the districts may be noted from the following quotations:

Brereton.—J. L. has $\frac{1}{4}$ acre practically all spoilt.

Hammerwich.—T. C.: Very bad.

Walsall Wood.—H. C.: Disease on newly broken-up land.

Sutton Coldfield.—W. C.: Disease much worse than last year in spite of dressing both seed and ground with sulphur. W. H.: Potatoes in allotment entirely destroyed.

Trentham.—Thirty cases reported. J. T.: 75 per cent. diseased. T. H.: Very bad; potatoes all one mass of disease. J. R.: Whole garden more or less affected except for one small patch on which no potatoes have been grown for 10 years. This is free.

Newstead.—S. I.: Not a clean root in 600-yard garden.

Ecclestone.—J. M.: Total yield four-fifths of last year's yield.

From the above quotations it will be noted that in the worst cases from 75 per cent. up to the entire crop was affected by the disease.

*A serious Potato Disease Occurring in Newfoundland. Bulletin 63, Central Experimental Farm, Ottawa, Canada, p. 4.

MEANS OF EXCLUSION

Recognizing the serious nature of the disease England made it a notifiable disease under the destructive insects and pests acts, 1877-1907. Under this act anyone failing to report the disease is liable to a fine of £10. The annual report of the Intelligence Division, Great Britain Board of Agriculture and Fisheries, for 1909-10, contains the following statement:

The alarm caused by the rumors of the spread of the disease in England led several authorities abroad to impose regulations against potatoes from this country. It was at first proposed to prohibit importation altogether, but on a protest from the board being made the matter was reconsidered and new regulations were drafted which admitted potatoes accompanied by a certificate from the grower that the crop came from a farm on which no case of wart disease existed and by a further certificate from the Board that no case of the disease had been reported from that neighborhood. These regulations were adopted by Malta, the Transvaal, the Orange River Colony, and, after a short period of total prohibition, by the Island of Guernsey. The other African colonies adopted precautions that did not entail the issue of a certificate, and the Island of Jersey prohibited the importation of potatoes from Great Britain altogether.

Australia has probably the most stringent quarantine measures against the wart disease with the exception of the Island of Jersey which prohibits importations of potatoes from Great Britain. In March, 1911, the Governor General decreed that all potatoes imported must be accompanied by a certificate stating that such potatoes are free from the diseases of late-blight and potato wart and also that they were grown at least 20 miles from any place known to have been infected within five years. After the potatoes are landed they are planted in quarantine and if on maturity they show no signs of the disease, they may then be distributed.

The Department of Agriculture of Canada has been empowered to take such action as may be necessary to prevent the introduction or spread of injurious insects and plant diseases. It has already done so with the wart disease of potatoes. Quoting from the *Gardeners' Chronicle*:

The Minister of Agriculture has power to prohibit the importation of plants from any given region should it be deemed necessary, owing to the presence of serious insect pests or diseases in such region. This has been done in the case of potatoes from Newfoundland and the neighboring islands to prevent the introduction of potato canker (*Chrysophlytis endobiotica*).

THE PLANT QUARANTINE ACT, AUGUST 20, 1912

Under the provisions of this Act the United States Government has issued the following:

NOTICE OF QUARANTINE NO. 3 (FOREIGN)

POTATO WART

The fact has been determined by the Acting Secretary of Agriculture that a plant disease known as potato wart, potato canker, black scab, etc., *Chrysophlyctis endobiotica*, Schilb. (*Synchytrium endobioticum* (Schilb.) Perc.), new to and not heretofore widely prevalent or distributed within and throughout the United States, exists in the following countries, viz., Newfoundland; the islands of St. Pierre and Miquelon; Great Britain, including England, Scotland, Wales, and Ireland; Germany; and Austria-Hungary.

Now, therefore, I, Willet M. Hays, Acting Secretary of Agriculture, under authority conferred by section 7 of the act approved August 20, 1912, known as "The plant quarantine act," do hereby declare that it is necessary, in order to prevent the introduction into the United States of the disease known as potato wart, potato canker, black scab, etc., to forbid the importation into the United States from the hereinbefore-named countries of the following species, viz., the common or Irish potato, *Solanum tuberosum*.

Hereafter, and until further notice, by virtue of said section 7 of the act of Congress approved August 20, 1912, the importation for all purposes of the species and its horticultural varieties is prohibited.

Done at Washington this 20th day of September, 1912.

Witness my hand and the seal of the United States Department of Agriculture.

WILLET M. HAYS,
Acting Secretary of Agriculture.

STATE OF NEW YORK
DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, *Commissioner*

Bulletin 42

Abstracts of Addresses

at

Farmers' Institutes

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INTRODUCTION

It is of the utmost importance that the instruction given at the Farmers' Institutes be clear, sound and uniform, in order that it may be easily comprehended, followed without question, and that there be no conflict — seeming or otherwise — between the teaching of the different instructors.

To this end the lecturers have prepared short abstracts of their principal addresses, the statements which they contain having been mutually agreed upon to be, in the light of present knowledge, the most orthodox agricultural principles and practices. These teachings have the sanction of the New York State Department of Agriculture. Often a speaker is misunderstood or fails to make his thought clear, and it is difficult for those in attendance at the meetings to carry away exact information, particularly when a number of subjects are treated.

These abstracts are intended to meet such needs and, in sheet form, are handed out by the speakers after the addresses. They are compiled in this volume in order that they may be more easily preserved for reference and reach a larger audience than gather at the institutes.

EDWARD VAN ALSTYNE,

Director of Farmers' Institutes.

FERTILIZERS

By J. G. CURTIS

Fertilizers, when used in connection with sufficient organic matter to keep up the soil requirements, such as stable manure, straw, green manure crops turned under, etc., do not make soils less productive, but more productive; however, if cultivated crops are grown with fertilizers alone, the soil will soon become less productive, since the organic matter supplied in the fertilizers is not sufficient to replace that used up during the growth of the crop.

When the appearance of the crop and the yield per acre is unsatisfactory and cannot be accounted for by unseasonable conditions, such as excessive drouth, cold weather, too much rain or poor drainage, we naturally infer a lack of one or more of the necessary plant-food elements in the soil in an available form for the use of the crop during a part or all of the growing season. Fertilizers are applied to overcome this apparent deficiency by supplying a sufficient quantity which, added to the amount naturally rendered available in the soil, will secure the crop constant supply and result in a larger crop and greater profit.

While fertilizers often pay even when used in a thoughtless and haphazard way, the profits from their use are largely in proportion to the knowledge of the user as to the fundamental requirements of soils and plants. It will be time and money well spent for the user of commercial fertilizers to get good books and fertilizer bulletins and make a thorough study of the subject.

In buying ready-mixed commercial fertilizers, it pays to buy the high-grade brands, which usually contain the largest relative amounts of actual plant food in the best and most available form per ton; and although the cost per ton is relatively high, the cost per pound of available plant food is invariably lower. The price alone does not always indicate the grade of goods, as a mixture of dissolved rock and potash, analyzing 10 per cent. of available phosphoric acid and 8 per cent. of actual potash, may sell for \$20 per ton and contain \$18 worth of available plant food, and be just as high-grade in its class as a \$40 complete fertilizer.

The purchase of the chemicals separately and applying them separately or mixing them at home, is the most satisfactory for the farmer who uses more than one ton of fertilizers per year and knows what he wants. Nearly all the fertilizer manufacturers will sell the chemicals, and usually on a cash basis instead of on six months' time, as is the case with the mixed goods. Plant food can be purchased in chemical form from 20 to 40 per cent. less than the average complete fertilizers, and they can be satisfactorily mixed at home with the aid of a shovel and screen at a cost not to exceed 5 per cent. of the cost of the materials. A great advantage from home mixing is inducing the farmer to study more closely his different fields and crops and the best treatment for the various soils on his farm.

Fertilizer materials should be purchased during the winter or very early in the spring, as the price is quite apt to advance with the increased demand at spring planting time.

Nitrogen is usually purchased for home mixing in the form of nitrate of soda, containing 15 per cent. of nitrogen; sulphate of ammonia, containing 19 per cent. of nitrogen, or dried blood, containing 12 per cent. of nitrogen. The nitrate of soda is immediately available, sulphate of ammonia is quite readily available, and dried blood, while more slow in action than the others, will probably all become available during the season of crop growth.

Potash can be purchased in the form of muriate of potash, sulphate of potash and kainite, the first two being refined salts of potash containing about 50 per cent. of actual potash, while kainite is a mixture of finely ground crude potash salts and contains about $12\frac{1}{2}$ per cent. of actual potash.

Muriate of potash is the form in which potash is most commonly used for home mixing, as it is somewhat cheaper than the sulphate and considered just as good except in the case of sugarbeets and tobacco, where the use of sulphate is preferred and is thought to improve the quality of the product. The muriate is a rather coarse, damp salt, gathers moisture from the atmosphere and tends to become lumpy if mixed with acid phosphate very long before using; while the sulphate is a fine, dry powder and acts as a dryer when mixed with other materials.

Phosphoric acid is usually purchased in the form of dissolved bone or dissolved phosphate rock and is called acid phosphate or

super-phosphate. It is made by treating bone meal or phosphate rock with sulphuric acid, which causes the unavailable phosphoric acid to become available for the immediate use of plants as food. This acid phosphate usually contains 14 to 16 per cent. of available phosphoric acid and costs the consumer in New York State from \$14 to \$16 per ton, making the available phosphoric acid contained cost 5 cents per pound. Raw bone, steamed bone, basic slag and raw rock phosphate or floats are all carriers of phosphorus, but relatively slower and of more uncertain availability.

It is a good practice to mix together 400 pounds of 14 per cent. acid phosphate and 100 pounds of muriate of potash per acre, either applying it broadcast with a drill, before plowing in the spring, or drilling it in broadcast when fitting the soil for the crop. This for corn on a good strong soil and in addition to a light dressing of manure (about six or eight loads per acre). If the soil is very deficient in humus — manure will hardly furnish sufficient nitrogen — give the corn a dressing of nitrate of soda broadcast by hand, when about two inches high and the leaves are not wet with rain or dew. Usually about 50 pounds of nitrate per acre for corn in addition to the manure, or 150 pounds per acre with no manure, plowed under or on a poor knoll that is especially thin soil. For cabbage or potatoes use twice as much of all three of the plant foods, because the acre value of those crops is much greater than corn, and if onions are raised on the same soil, use three or four times as much fertilizer as for corn. On a very heavy clay soil use somewhat less potash, and on a comparatively new muck soil, use very little or no nitrogen, but apply phosphorus and potassium quite liberally.

Phosphoric acid and potash should be gotten down well into the soil for best results, as they become fixed very close to where they are placed. Nitrate can be put on the surface and the rains will dissolve it and carry it down into the soil. It should not be sown in the spring until the excess moisture has settled down into the soil and the soil is fit to work, otherwise it might be leached out before it could be used by the growing crop. It should not be sown late in the summer or fall in large amounts, for any not used by the plants would be leached out of the soil early in the spring.

THE USE OF LIME

By D. P. WITTER

Lime is not needed for some crops, but for all leguminous plants, such as clover, alfalfa, beans, peas and vetches, an application of lime is desirable and in many cases necessary. Among the benefits to be derived from its use are the following: It improves the physical condition of the soil, promotes bacterial action, acts upon the other minerals in the soil, serves as a plant food and sweetens the soil, thus increasing the activity of the nitrogen-gathering bacteria that live on the roots of leguminous plants, greatly increasing their usefulness.

The kind of lime to buy is an important farm problem. The farmer is more imposed on and defrauded in buying lime than most other fertilizers.

Lime, known as carbonate of lime, is found in lime-rock, ground or unground, marl and oyster shells. Some samples of these forms are over 95 per cent. pure carbonate of lime.

If 100 pounds of practically pure lime-rock is thoroughly burned, about 44 pounds of water and gases are driven off by the heat, leaving about 56 pounds of lime, known as quicklime or lump lime (calcium oxide). Of the 44 pounds driven off, about 18 are water. If the 56 pounds of burned lime is slaked by adding 18 pounds of water, it then weighs 74 pounds, and by this process is reduced to a fine powder. There is no more lime in the 74 pounds than in the 56, but the form is changed. Lime in this form is known as hydrated lime.

If the 74 pounds of water-slaked lime is allowed to remain in the air, it absorbs the gases (26 pounds) that were driven off in burning, and will weigh 100 pounds again, the same chemically as before it was burned, but in a different form. It is again carbonate of lime.

One hundred pounds of burned lime, 130 pounds of hydrated (water-slaked) lime and 180 pounds of carbonate of lime (ground raw rock, air-slaked lime, marl or oyster shells) are of the same value for the land, if all possess the same degree of purity and

fineness. The finer the particles of lime, the more quickly they become available for the plant. Burned lime is usually much finer than the other forms.

The farmer should buy lime in the form that he can get the most for a dollar, taking into account freight, hauling and its availability. Twenty tons of good, fresh-burned lime, if left in the field until thoroughly air-slaked, weighs 36 tons. The farmer bought, paid for and hauled 20 tons, but he has 36 tons of carbonate of lime equivalent to the same weight of raw rock, and more quickly available.

The following table of equivalent values was prepared by Dr. L. L. Van Slyke of the Geneva Experiment Station:

Burned lime per ton	Hydrated lime per ton	Carbonate of lime per ton
\$8.00	\$6.05	\$4.50
7.00	5.30	3.95
6.00	4.55	3.40
5.00	3.80	2.80
4.00	3.05	2.25
3.00	2.30	1.70

Lime may be stored in a dry building and will air-slake without danger of fire; or it may be piled in the field until ready to spread. The smaller the piles, the quicker it will slake. It may be spread in the fall. Spreading after plowing but before harrowing distributes the lime well. Lime being a mineral will not be lost to the soil unless it is washed away.

On most soils, apply once in five years, from one-half to one ton of burned lime, or 1,800 to 3,600 pounds of carbonate, for clover and other legumes except alfalfa, which should have twice that amount.

Lime should not be applied to land before planting potatoes, as it promotes the growth of potato scab.

IMPROVEMENT OF MEADOWS AND PASTURES IN NEW YORK STATE

By D. P. WITTER

Statistics show that of over fifteen million acres of improved farm land in New York State, two-thirds are in grass, including meadows and pastures, more than one-third of the entire area being in pasture lands.

On account of shorter rotation of crops, better care and application of farm manures, meadow lands are yielding larger crops of hay now than a quarter of a century ago, while pasture lands are becoming poorer, requiring the farmer to feed dairy cows grain or other supplemental crops the entire year.

Some meadow lands may be kept up without reseeding or manuring — lands annually overflowed. In most cases it is better to plow the land after being in meadow one or two years. Spread ten or twelve loads of manure on each acre while in grass, use from fifteen hundred to two thousand pounds of lime and two hundred pounds of acid phosphate per acre before seeding. Sow only the best seed. Do not pasture the meadows.

The following grass-seed mixture is recommended for meadows:

<i>On medium dry land</i>	Pounds per acre	<i>On wet land</i>	Pounds per acre
Red clover	7	Red clover	3
Alsike clover	2	Alsike clover	4
Timothy	8	Timothy	5
		Redtop (re-cleaned).....	5

Among the causes of deterioration of pasture lands are the following: Sowing only short-lived grasses for permanent pastures; too early, too close and too late grazing; lack of fertility.

Thousands of acres of pasture in New York State should be reforested.

If the problem is one of drainage, tiles should be laid as soon as convenient. With a fair stand of grass, and weeds not too abundant, conditions may be improved by applying one or two tons of lime and ten or twelve loads of stable manure. If manure cannot be obtained, use 100 pounds of nitrate of soda and 200

pounds of acid phosphate per acre. Apply the lime in fall or early winter and the fertilizer in the spring.

Where seed is required for permanent pasture, the following mixture is recommended:

	Pounds per acre
Red clover	4
Alsike clover	3
White clover	2
Timothy	8
Redtop (recleaned)	5
Kentucky blue-grass (recleaned)	5
Orchard grass	2
Meadow fescue	2

Some of the grass-seed mixture may be sown where the grass is thin in early spring and harrowed in, keeping stock off the land until plants become established.

Where pastures can be plowed and conditions permit, pasture in a rotation, cropping two years, mowing one year, allowing the plants to become established, then pasture as long as good pasture is maintained.

Keep stock off pastures in spring until plants get a good start; do not graze too close; allow plants to get a good start before winter. Where practicable, divide the pasture into two or more fields and alternate the stock, giving each field a rest of one or two weeks as often as possible in summer. Mow all weeds and brush at least once each year before seeds are formed.

SOME REASONS WHY CLOVER FAILS*

By EDWARD VAN ALSTYNE

No matter what the line of farming — whether stock keeping or otherwise — the maximum profit and productivity largely depend on the ability to secure a stand of clover.

There are six principal reasons for failure. Often several of them are factors — sometimes only one — yet lacking this, all the others go for naught. I shall not mention poor seed, the failure of which is apparent. To determine its purity and germinating power is not difficult of accomplishment. I name these reasons in reverse order of importance and discuss them in that order.

1. **Failure to properly cover the seed.** This involves time and manner of sowing. Here, as elsewhere, it is well to heed the teachings of Scripture and remember the seed in the parable, which sprang up quickly, but “soon withered away because it had no depth of earth.” There is less loss from this cause when the seeding is done with spring grain on freshly-worked soil. Even then, I prefer to sow it ahead rather than behind the drill hoes. If the seed has vitality it will come through, although more slowly, but it will withstand the burning heat and drouth which often must be reckoned with after the grain is harvested. Where it is sown with winter grain, I am satisfied after many years’ trial of different methods and times of sowing, that through a period of years, best results will be obtained by sowing as the frost is going out, when the land is honeycombed. The seed will go in the cracks, materially assisted by rain, and at that season it will not sprout quickly if it lies on the surface for a day or two. As soon after as the land will bear it, a roller passed over the ground will firm the seed as well as the roots of the grain. Rarely will the clover sprout so as to be affected by frosts as it will if sown earlier or more shallow. It then attains a root growth and strength which materially assists to carry the plants through the trying period of midsummer.

* Reprinted from *Hoard's Dairyman*.

I have a rather light field so seeded this spring. During the prolonged drouth I thought the clover was gone, but after the rains came in late summer it revived and now there is a respectable stand. Had this been in shallow or not sowed until late, there would not have been root enough to carry it through.

The above is particularly important when the other factors are absent or only partially in evidence. Given them, clover will grow with as much certainty as will a weed seed if only sprinkled on the ground.

2. Unfavorable conditions for development of clover bacteria or nodules. While this is more or less bound up with moisture and humus content, it has more to do with clover failing than is usually supposed. Probably in most soils there is enough clover bacteria present to render it unnecessary to sow them artificially, yet I know of cases where the sowing of earth from an established clover field or of some manufactured culture has been of marked benefit, sometimes making the difference of a good catch. This is substantiated by the experiments of Dr. Lipman, of the New Jersey Station, and Professor Spillman, of the U. S. Department of Agriculture. All germ life thrives in dampness and decaying vegetable matter; lacking these, there may be abundant plant food, yet the clover dies. I am sure that the good results obtained by even a light dressing of manure are due fully as much to the fact that a medium is supplied in which the bacteria may multiply, as to the available plant food it contains.

3. Lack of available plant food. When I hear men advised to sow clover on an impoverished soil to enrich it, I marvel how it is to be done. There must be available plant food to nourish and grow the clover. This is the one plant, to my mind, to which potash is most important. Clover seems to crave it. On most of my own land I get no returns from this element on other crops except potatoes, but on the clover it is always of decided benefit. Phosphoric acid is almost as necessary. The former can be most cheaply supplied by muriate of potash, the latter by dissolved South Carolina rock. When these elements are not abundant in an available form, it is a waste of time and cash to sow clover seed, no matter what are the other conditions. While clover is a nitrogen-gathering plant, it is impossible for

it to obtain any nitrogen from the air until the nodules are formed and there is some amount of leaf growth, hence when available nitrogen is not present, a supply in the early stages of the clover's growth is vital. One should remember that the amount of nitrogen in a soil is always commensurate with the quantity of vegetable matter it contains. I have used from 75 to 100 pounds of nitrate of soda on young clover with marked results. This, being quickly soluble even in cold weather, is certainly the best form of nitrogen. More than the above quantity furnishes so much that the plants take none from the air, no nodules being found on their roots. Available lime, too, is often needed as a base. A ton of clover hay contains about fifteen pounds of lime. Where land has been cropped for a long time there is quite apt to be a deficiency, particularly on the higher lands where the water has carried away this element. In a recent examination of the water through the state of New York by the Health Department, it was found that the water on the lower levels was harder or contained more lime than on the hills above.

4. Insufficient moisture supply. At first glance this might seem to be beyond our control. True, we cannot control the falling water of either the "early or latter rain," but we can control the fallen water to a much greater extent than is usually done. If the land is allowed to lie untouched after it is turned by the plow, a quantity of water will be lost, which can be saved by following the plow with the harrow or roller. Fully as important is its control by vegetable matter in the soil. This acts as a sponge to prevent its escape either by evaporation or leaching. As suggested above, these two are necessary for the development of bacteria. To attempt to suggest how this may be obtained is entirely beyond the scope of this article.

The writer has four fields this year of clover. The factors other than moisture and vegetable matter are nearly equal. Two fields containing an abundance of vegetable matter have stands which could scarcely be improved; the others might be much better.

5. Poor drainage. This is often a cause of clover failure on rich land well supplied with humus not naturally underdrained, not only because the plants are thrown out by heaving, but be-

cause water-logged soil with the air and heat shut out quickly becomes sour. Such land remains cold for a long time in the spring so that nitrification does not take place. There is too much water at certain periods. There is a vast difference between a soil saturated with water and one where a film of water simply surrounds the soil particles and air and heat have access. Soils so saturated suffer more in daytime from lack of water and become baked. It is a well-established fact that an underdrained soil is not only drier in a wet time, but also contains more water in a dry one.

Many a dollar is thrown away when spent for clover seed, which the spender would feel he could not afford to lay out in drainage, yet spent in drainage would have returned manyfold for years to come.

6. Acidity of the soil. No matter how well the seed is put in, how well supplied with vegetable matter, plant food and moisture, unless the soil is sweet, clover will not grow; or it will grow, as Dr. Watts says, "at a poor, dying rate."

To illustrate: I have one field which for thirty years has had a liberal dressing of stable manure once in each four years' rotation with additional applications of commercial fertilizers. The crops and soil have steadily improved. It has grown grain so stout as to try the Christianity of the one who cut it. It is the best potato field I have, yet in all that time I never had on it a crop of clover although I always sowed the seed. Before sowing winter grain in 1910, I limed it and this year it cut fully three tons of clover hay per acre. On another field, half of which was limed, we had double the clover on the limed portion.

Conclusions. I feel confident that, given these six conditions, with good seed, barring insect injury or disease, clover is as certain as any crop on the farm.

It is much wiser as well as more economical to get at underlying principles, and then strive to the utmost to follow them out, than to charge clover failure to "bad luck," change of seasons, or to failure to sow in the proper phase of the moon or sign of the zodiac.

CLOVER AND TIMOTHY WITH AND WITHOUT A NURSE CROP

By LOWELL ROUDEBUSH

A nurse crop means that grass, whether clover, timothy or red-top, singly or in combination, will not be given a proper chance, since available soil fertility, light and moisture is being divided; it signifies a lack of confidence in the ability to grow a profitable crop of wheat, rye, oats or barley. Some of the advantages of sowing grasses without nurse crops are:

1. A better stand, hence a larger yield.
2. Fewer weeds; hay of higher quality.
3. Quick returns.

The following experiments were made with clover and timothy, with and without nurse crops. The size of each plot was two acres. The nurse crop for clover was oats; for timothy, wheat. The clover was sown in April, the timothy in early September.

CLOVER WITHOUT NURSE CROP

	Pounds per acre
1908 Harvested August, 1908.....	1,619
1909 Same site June, 1909.....	2,650
1910 Harvested August, 1910.....	1,325
1911 Same site June, 1911.....	2,160
1912 Good stand, but owing to the drouth was not harvested, simply clipped.	

CLOVER WITH NURSE CROP

1908 Harvested June, 1909.....	2,420
1910 Harvested June, 1911.....	2,365
1912 Bad stand, will be plowed up.	

TIMOTHY WITHOUT NURSE CROP

1907 Harvested July, 1908.....	5,600
1909 Harvested July, 1910.....	4,735
1911 Harvested July, 1912.....	1,400

TIMOTHY WITH NURSE CROP

1907 Harvested July, 1909.....	3,750
1909 Harvested July, 1911.....	1,655
1910 Harvested July, 1912.....	1,250

The clover hay on sites without nurse crop was higher in quality than that with, which was also true of the timothy.

ROTATION OF CROPS

By LOWELL ROUDEBUSH

The theory and practice of the rotation of crops is based on the fact that nature loves a balance; that the limiting factor in production is the smallest amount of available nitrogen, phosphorus and potassium or their compounds in the feeding zone of the plant; that plants differ in root growth, in the relative proportions of food required, in their ability to add to or take from the soil plant food, to increase the amount of nitrogen and compounds of phosphorus and potassium in the soil.

No rotation of crops is good that does not cover the surface and fill the soil with living roots, and that does not include some legume, as clover, vetch or alfalfa, at least once in five years. One shallow-rooted plant following another, as wheat or rye after corn, and requiring the same relative proportion of food, or the same crop grown on the same site continuously for more than two years, destroys the balance of the soil and invites insect pests and fungous diseases.

The value of a rotation as compared with a continuous crop is illustrated by an experiment with wheat at Rothamstead, England, covering a period of 52 years. The yield in a three-year rotation was 34.5 bushels per acre; continuous, 13.1. For 23 years in succession, omitting 1911 when no wheat or rye was sown because of climatic conditions, the average difference in yield per acre of wheat after corn, as compared with wheat after potatoes or tobacco, was 11 bushels per acre. Potatoes after potatoes, cabbage after cabbage, onions after onions and peas after peas, resulted in lessened yields of inferior quality and injury by insects and fungous diseases.

Altitude will very largely determine the rotation. Potatoes, peas and oats or oats seeded to clover, for northern New York; corn, peas and oats or oats alone, wheat, clover, substituting potatoes for corn, for central New York; rye instead of wheat for eastern New York. These are short rotations and do not include timothy and redtop and assume permanent pastures. In both of the above, timothy may be substituted for clover, and so lengthen

the rotation two years where peas, or peas and oats, are grown. Buckwheat and millet are catch crops when the former is not emphasized.

The experiments of Sanborn in Missouri and Utah indicate that in a three- or four-year rotation, corn, wheat, clover; corn, oats, wheat, clover, gave larger yields, respectively, than either in continuous crops. In these experiments 200 pounds of a 2-10-2 commercial fertilizer per acre was applied annually to the wheat and oats, and 200 bushels of manure to the corn in continuous culture.

The experience of the onion growers of Chillicothe, O., the potatoes of the Miami Valley, the truckers of the eastern shore of Virginia, emphasize the value of a rotation from the viewpoint of insect pests and fungous diseases.

The theory of plants excreting toxics or poisons to themselves and plant food to others of different family or order is probably true, though not absolutely proven.

THE NEED OF HUMUS

By J. G. CURTIS

Soil is decomposed rock plus humus. Humus is organic matter in any stage of decay and may be either animal or vegetable. Organic matter is anything that has life or that has had life. The humus content of soils is made up of the refuse of former crops and consists largely of dead leaves, roots, stubble, weeds, stable manure, etc., that were plowed under during cultivation.

Humus is the sole source of nitrogen for all plants except legumes, which have the power of obtaining indirectly from the air a portion of the nitrogen necessary for their growth. Plants which comprise our farm crops cannot make a normal and thrifty growth unless there is a constant supply of nitrogen available for their roots to feed upon at all times during their period of growth. Thus it is plain that as far as the nitrogen supply is concerned, the amount of humus contained in a soil will largely gauge its productiveness; or, to state the case in another way and leaving the peaty or muck soils out of the question, soils of sufficient depth and drainage are productive or unproductive in almost exact proportion to the amount of humus they contain.

Besides being the source of nitrogen in the soil, humus is largely responsible for rendering available the mineral elements of plant food in the soil, such as potassium, phosphorus, calcium, magnesium, etc., which are largely contained in the rock particles (stone, sand, silt and clay) which go to make up the mineral part of the soil and which have to be dissolved before the various elements contained in them become available as plant food. One of the products of the decay of humus is carbon-dioxide, which is absorbed by the soil moisture and gives to it the power to more rapidly dissolve the soil particles, so that the humus is not only directly responsible for the nitrogen supply, but is indirectly responsible for the available supply of the other plant-food elements in the soil.

The humus is also important in that it improves the physical condition of the soil as well as its moisture-holding capacity,

while it allows any excess water to more readily drain and the air to enter.

Most soils that have been under cultivation for many years have become deficient in humus. This is not the case where large numbers of live stock are kept on a small farm or where large quantities of stable manure are drawn from the city on a small farm, as is often done by market gardeners. When two tons of hay per acre is harvested and the sod plowed under, about two tons of organic matter per acre is added since the part of the plants harvested just about equal in dry matter the roots and stubble plowed under.

Thus it is plain that we are adding humus much faster when we follow a short rotation and plow under good fat sods frequently, than when we leave our meadows down several years and plow under thin, skinny sods infrequently; and we also see the great value of cover crops or catch crops for green manuring, and through their use add humus to the soil more economically than in any other way.

Rye after corn or potatoes may be used in New York State and on heavy wet land that heaves badly, since rye is so hardy it can be sown very late in the fall. Where the soil is well-drained and the cover crop can be sown as early as the middle of August, winter vetch can be used. This is a legume, and each pound of dry matter in a legume contains about three times as much nitrogen as a non-leguminous plant.

For a green-manure crop in the early spring, sow peas and oats mixed, and to grow the green-manure crop during midsummer, buckwheat may be used to good advantage. The legumes are always to be preferred where practicable, because of their high percentage of nitrogen.

It is often possible to buy old straw-stacks at a very reasonable figure, and when the hauling distance is not too great, they are a very cheap humus-making material. The purchase of horse manure from city stables, where the haul is a short one, is usually a profitable investment.

Arrange to turn under a considerable quantity of organic matter every time fields are plowed to take the place of that used during the growing season each year.

FARM MANAGEMENT

By A. J. NICOLL

Selecting a farm.— Good soil, good buildings, good market and social advantages are important.

Management of the business of the farm.— Annual inventory; weekly cash account; accurate records of all dairy cows and all farm crops, showing production, cost of production, and profit and loss on each cow and crop. All valuable papers kept in a convenient and safe place. A twenty-five-cent letter or bill file will answer this purpose.

Management of the soil.— Drainage; rotation of crops; manure well cared for and well distributed; deep plowing and thorough and frequent tillage of the soil; the use of cover crops; growing legumes, such as clover, alfalfa, soy beans and Canada peas; intelligent use of commercial fertilizers.

Management of the crops.— Selection of the variety best adapted to soil, climate and market conditions; selection of seed — get acclimated seed if possible. Test for germination all seed used, having small seeds tested for purity at the Experiment Station. Good seed-bed; frequent harrowing from the time the land is plowed until crop is put in to conserve moisture.

Harvesting and marketing the crop.— The time for profitable harvesting and the methods employed will depend on local conditions. The crop will be sold for cash or fed to farm animals. Keep records to show whether feeding produce nets as much as selling in market.

Management of the animals.— Are there too many animals? Are they all profitable? Are records kept of each cow in the herd, showing production, cost of production and profit or loss on each animal? Did you get as much for the food they consumed as if you had sold it in the market for cash? Are the animals well cared for, housed and fed? Are you using pure-bred sires from dams known to be profitable animals? Can other lines of animal husbandry be profitably adopted?

Management of farm help.— Have an agreement in writing or before a witness. Provide a house for the man if possible. Use

care in assigning work, providing continuous work through the year by a proper rotation of crops and by keeping the required number of profitable animals.

Management of the machinery.—Buy what is needed, and no more, of the best. In buying power, plan for a little more than may be used. Keep all machinery housed when not in use. Carefully clean and oil all machinery after using before housing. Keep machines in repair, having a supply of assortments of bolts, rivets and small parts on hand, with necessary tools ready to make repairs at home if possible. Replace worn machinery at the proper time.

NOXIOUS WEEDS AND HOW TO DESTROY THEM

By LOWELL ROUDEBUSH

Weeds levy an annual tax of about twenty million dollars on the farmers of New York by taking out of the soil as much moisture as cultivated crops and two-thirds as much fertility, thus reducing the quantity and quality of crops produced.

A weed is a plant out of place — hence, cultivated plants may become weeds. Seventy per cent. of our noxious weeds come from other countries and seem to do better in the land of their adoption than where native. For the most part our native weeds are of the forest which, when cut off, changes their environment or surroundings so violently that they soon disappear. Those of foreign origin are the weeds of the open,—from the valleys of the Nile, Ganges, Volga, Danube, Po, Rhine and Dee.

To destroy weeds, particularly after they are established, we must know something of their root, their growth and means of reproduction. The three general classes are annuals, biennials and perennials. Annuals reproduce themselves by means of their seeds — ragweed, lamb's-quarters and pigweed. Biennials reproduce themselves by means of seeds only, but they generally live two years. Most of our garden vegetables, such as the beet, carrot, turnip and parsnip, belong to this class. They generally have a tap-root. Mullein, wild carrot, blue thistle and teasel are good examples. Perennials reproduce themselves by means of underground root stocks and also seeds, such as Canada thistle, horse sorrel, couch grass and yarrow. Weeds have no value in New York, but they may in the South by covering bare surfaces during the open winters, thus preventing erosion and the leaching out of available plant food.

Persistent effort will, in most instances, destroy weeds. Do not allow weeds to get started and do not let their seeds mature. This can be prevented: By sowing only pure grass and grain seeds, and by not purchasing and applying manures full of noxious weed seed; by frequent and shallow tillage of cultivated crops; by going over the fields in April and September with spud and hoe and cutting off the biennials three or four inches below the

surface; by mowing or clipping permanent pastures and stubble fields when the largest or most abundant weeds are coming into bloom; by mulching horse sorrel before seeds have matured with straw or its equivalent, and salting isolated patches in permanent pastures (horse sorrel cannot stand tramping, but delights in ordinary tillage); by pulling by hand wild carrot when they are few and milkweed just as they come into bloom; cutting by hand and carrying out of grain fields all dock; cutting off the shoots of Canada thistle as soon as they appear above the surface; by rotation of cultivated crops, or a rotation including millet or buckwheat; spraying grain or other fields infested by wild mustard or members of that family, before they bloom, with sulphate of iron solution, 100 pounds to 50 gallons of water.

Of the animals kept on the farm, sheep are the most helpful in the destruction of weeds. White top, ragweed, golden rod and others too numerous to mention are relished by them. Fertilize heavily with commercial fertilizers, sites low in plant food, thus leaving no room for weeds; in short, cover the surface with plants in place of weeds.

FEEDING STOCK FOR PROFIT

By LOWELL ROUDEBUSH

Feeding stock for profit depends on the man, the animal, its food, its environment, the market, value of the excreta.

You must like the animal whether it be a sheep, hog, cow or horse, because you will then see in ultimate results those apparently insignificant, yet very important little things. No one can afford to feed a scrub. Have a good individual and then have it where it belongs. Do not try to make a running horse out of a drafter or a dairy cow out of a Hereford.

The animal cannot make something out of nothing, it must be properly fed. Animals are fed to maintain life, to make growth, wool, hair and milk, for work or for the market. Different feeds vary in value for making growth, milk, etc., or for maintenance, work or fat; in general they are valuable for the following: Palatability, volume, digestibility, nutrient content, ash and corrective or medicinal properties. Wheat bran is a standard as to palatability and volume; is ideal for cows, sheep and goats, but carries too much fiber for hogs; is well-balanced as to protein and fat, rich in ash, laxative. Corn is palatable, but lacks volume; easily digested, but out of balance except for work, maintenance or fattening; very low in ash. Oats are not as palatable as corn and are good in volume, but not easily digested because of fiber; have more protein than corn; are medium in ash, slightly constipating when fed to hogs whole or ground. Oil meal is fairly palatable, low in volume, easily digested, rich in protein, high in ash for a concentrate, a pronounced laxative. Cottonseed meal is medium as to palatability, very low in volume, easily digested; it is highest in protein of any of our commercial by-products or concentrates, very high in ash, pronouncedly constipating, affecting the kidneys. Clover hay is very palatable and good in volume, easily digested, though high in fiber, well-balanced, rich in ash, slightly laxative and affects the kidneys. Alfalfa is high in palatability and volume, easily digested, ideal as to protein, very rich in ash, laxative, affects the kidneys, but not so much as cottonseed meal. Timothy is fairly

palatable, good in volume, not so easily digested as clover, low in protein, good in ash, constipating; it is ideal for the driving horse all the year and the work horse during the summer. Oats and pea hay is very palatable, good in volume, well-balanced, high in ash, normal in effects on the digestive tract. Silage is generally very palatable, ideal in volume for most animals, easily digested, a little out of balance, low in ash, because it is the whole corn plant, decidedly laxative.

Below are given the protein content of many more feeds, thus enabling the feeder to intelligently and economically combine the various substances to meet his conditions. In the following table the ton is the unit and only the digestible protein is given.

	Digestible protein per ton		Digestible protein per ton
Corn silage	25 lbs.	Corn	114 lbs.
Timothy hay	80 lbs.	Oats	160 lbs.
Clover (red)	166 lbs.	Bran (wheat)	246 lbs.
Alfalfa	216 lbs.	Gluten meal	500 lbs.
Alsike	174 lbs.	Oil meal	600 lbs.
Corn and cob meal.....	108 lbs.	Cottonseed meal	720 lbs.

The cost of the digestible protein will vary year by year as the price of the feed on the market varies. The feeder must be his own judge as to the amount to feed — what the animal cleans up leaving it hardly satisfied is a safe rule. The nutritive ratio for maintenance, work or fattening is not far from one part protein to nine parts carbohydrates; for growth, wool or milk, one of protein to six of carbohydrates, although 1 to 6.5 is often better and not so costly as 1 to 5. A ration too narrow is just as unhealthful as one too broad, and costs more. A good ration for dairy cows is five hundredths of a pound of digestive protein to each pound of milk in three pounds of grain and a necessary amount of roughage.

Next after food is environment — good buildings, giving maximum of comfort, with light, pure air, cleanliness, and minimum labor in feeding, etc., and opportunity for waste of food.

The care and management of the excreta will give a profit alone on the investment if intelligently done. Feeding stock for profit requires a high order of intelligence, constructive ability and common sense.

FEEDING DAIRY COWS

By D. P. WITTER.

Balanced rations and proper feeding were not so necessary when dairy cows were dry during the winter, summer pastures afforded an abundance of grass, and the cow was kept largely for the manure she produced. Most dairymen understand the fundamental principles of judicious feeding, but few make use of the tables which have been provided for them.

Cows differ in their ability to digest and assimilate food, and plants of the same family differ in analysis; therefore while tables and rules for feeding may help the dairyman formulate a proper ration, the feeder must watch his animals and use judgment.

There also may be a difference between greatest production and greatest profit. If the dairyman is keeping pure-bred animals and expects to derive most of his income from the sale of pure-bred stock, he may feed, for a time at least, for greatest possible production; but if he is keeping grade cows and selling dairy products, he should feed for greatest profit, considering always the health and vigor of his animals. He may feed a ration made up mostly from feeds grown on the farm, even though the percentage of protein and carbohydrates is not according to the rule, and obtain from it more profit than if he bought grain to make the parts exactly balance.

The following ration will give good results, but it lacks succulence and would be more valuable if ensilage or roots formed a part. All but the one pound of cottonseed meal may be produced on the farm.

	POUNDS DIGESTIBLE		
	Pounds	Protein	Carbo- hydrates
Mixed hay	20	1.240	9.200
Corn-meal	3	.237	2.292
Oatmeal	2	.184	1.136
Buckwheat middlings	2	.440	.912
Cottonseed meal	1	.372	.444
		<hr/>	<hr/>
		2.473	13.984
		<hr/>	<hr/>

The following ration contains only three pounds of purchased grain:

	Pounds	POUNDS DIGESTIBLE Protein Carbo- hydrates	
Corn ensilage	40	.360	5.160
Clover hay	10	.680	3.960
Corn-meal	3	.237	2.292
Oatmeal	2	.184	1.136
Wheat middlings	1	.128	.607
Cottonseed meal	2	.744	.888
		<hr/>	<hr/>
		2.333	14.043
		<hr/>	<hr/>

Two pounds of gluten feed substituted for the oats would improve the ration, but would mean more purchased grain.

Cornell Bulletin 154, which is free, gives information for computing rations. The operation is very simple.

To those who do not care to use the above method of compounding rations, I would recommend the following plan, which was also worked out at Cornell.

The ordinary coarse foods in use in this state are mixed hay, corn ensilage and cornstalks or fodder. The ordinary grain foods are divided into three groups with respect to total protein — low protein, less than 12 per cent.; medium protein, between 12 and 25 per cent.; high protein, over 25 per cent.

LOW PROTEIN GROUP		MEDIUM PROTEIN GROUP		HIGH PROTEIN GROUP	
	Per cent. protein		Per cent. protein		Per cent. protein
Corn	10.3	Wheat bran.....	15.4	Malt sprouts.....	26.3
Oats	11.4	Mixed wheat feed.	16.3	Linseed-oil meal..	33.9
Wheat	11.9	Standard wheat		Cottonseed meal..	45.3
Rye	11.3	middlings	16.9	Gluten feed.....	25.0
Barley	12.0	Flour wheat mid-		Brewers' dried	
Buckwheat	10.8	dlings	19.2	grains	25.0
Hominy chop.....	10.5	Cottonseed feed ..	20.0	Distillers' dried	
Dried beet pulp..	8.1	Buckwheat feed		grains (corn)	31.2
Corn and cob		(shuck in).....	18.3	Buckwheat mid-	
meal	8.5	Pea meal.....	20.2	dlings (free from	
		Cull beans	21.6	shuck)	26.7

For the mixture use equal parts by weight from each group, using at least one light grain. In addition to roughage, the cow

should have one pound of grain for each three or three and one-half pounds of milk produced, if the milk is 4 per cent. fat or richer. If the milk is below 4 per cent., feed one pound of grain to each three and one-half or four pounds of milk. If clover hay, alfalfa or other roughage rich in protein is fed, use less protein in the grain.

While dry, dairy cows should usually have some grain to build them up; it should be of a cooling nature, such as oats or wheat bran.

The farmer will usually get more food for his money if he buys only unmixed grain. Nearly all of the so-called mixed feeds should be avoided, many of them being almost worthless.

THE VALUE OF A SILO ON THE FARM

By FOREST HENRY

A dairyman needs a silo because it enables him to feed his stock better and more cheaply.

Corn is one of the cheapest and surest stock foods that can be grown. Fodder corn can be grown in a season when a hay crop would be nearly ruined by drouth. By cultivation we can so conserve moisture that we can grow a fairly good crop of corn. The great question at present is how we can handle this corn fodder so as to get the most out of it. The modern silo solves this question; viz., an air-tight silo so constructed that it will not blow over or rot out.

The ears of corn practically represent only one-half of the value of that plant so far as food is concerned. The larger part of this food is in the lower part of the stalk, but incased in a substance so hard that our farm animals get very little of it in the dry stalk. When it is cut in small pieces by the silo filler and cooked up in the silo, it is readily eaten by even the smallest of our live stock. In actual experience we get more than double the value in good feed when we use the corn through the silo, than we do when we try to use it in a dry-cured form. We not only save feed, but our animals do decidedly better on it. Corn fodder cut into a silo comes the nearest to good pasture of any feed we have. It is often actually cheaper. All of the objections of the past have been overcome by modern silos and modern methods of handling, and the silo stands out to-day as one of the great achievements among modern inventions. It is the cheapest way the entire corn crop can be handled.

PROFITABLE MILK PRODUCTION

By D. P. WITTER

This subject is not discussed from the standpoint of the dairyman who derives a portion of his income from the sale of pure-bred animals, but from that of the man who derives all his income from the dairy — from the sale of milk or its products.

Among the essentials for profitable milk production are the man, the cow, her care and feeding and marketing the milk.

The man should be one who loves the business of dairying. He should be able to read, think, keep accounts and to use good business judgment, not only in the selection, care and feeding of his herd, but in the management of his land.

The cow, whether a pure-bred, a grade or so-called native, must be a profit maker. Both excellent and worthless cows may be found in each of these classes.

No dairyman can afford to have any but a pure-bred sire at the head of his herd, a sire selected from a long line of ancestry of good performance. The breed he will select depends upon his taste and the market. If the milk is to be used or sold upon a butter-fat basis, the Jersey or Guernsey sire will be satisfactory; but if the milk is sold by the one hundred pounds or the quart, the Holstein or Ayrshire sire will be more profitable. Very profitable dairies may be built up by the use of such sires with a selection of grade cows from any of these breeds or choice natives.

The selection of the dairy cow by conformation only is often misleading. Some method must be adopted by which the cost of production and the annual income from the individual cow can be approximately known. Such a record can be most cheaply had by becoming a member of a cow testing association. If that is not convenient, once a month the dairyman should weigh the milk given by each cow during twenty-four hours and determine the amount of fat; he should also weigh the feed given the individual cow for twenty-four hours and determine its value. By this means he can learn which are the boarders and which the profit-makers in the herd. The income from each cow must cover the

cost of feed and at least \$30 for labor, interest and depreciation, before she can be placed in the profit-making list.

Do not overstock the farm. Too many cows on a farm means that the pastures will be injured by too close cropping, also that nearly all the grain fed must be purchased, both of which render the dairy less profitable.

By the use of the summer silo or repeated sowing of oats and peas, beginning early in the spring, and by the use of clover, alfalfa, millet and corn, pastures may be supplemented and the flow of milk kept up during the late summer and early fall months with but little additional feed. Give an abundance of good succulent food containing a proper amount of food elements; have regular hours for milking, and use the utmost kindness in the care and handling of the cows.

All these conditions may be met and yet, because of slovenly or uncleanly habits, the dairyman fail of the highest degree of success. Dairy products should be delivered in perfect condition and in clean packages if the farmer would receive the greatest reward for his labor.

THE PROBLEM OF CLEAN MILK

By E. M. SANTEE

The problem of clean milk is economic as well as sanitary.

The **economic side** is affected by supply and demand. The supply will always be affected by the quality of the individual cow and the equipment. No cow is profitable that produces less than 4,000 pounds of 3.7 per cent. milk. The scales, properly used, are a necessity on every dairy farm. The equipment should combine a healthy herd, a convenient, tight, smooth-walled, well-ventilated, well-lighted stable with cement floor; a silo; convenient, sanitary milkhouse separate from the stable; a good, convenient supply of pure water; narrow topped milk pails; facilities for cooling the milk and sterilizing the utensils; cold storage for the milk while waiting for shipment.

The **sanitary side** of the question is affected more by methods than by equipment. Cleaning, feeding, milking and caring for the milk are each vitally important. The cows should not be brushed before milking. When the price received will not warrant a thorough washing of the cows, very good results may be obtained by simply wiping udder and flank with a moist cloth. Everything that stirs up dust in the stable should be avoided. The hay and straw should be thrown down in an adjoining room and brought in after the dust has settled. Too many forget that the milking stable is really a kitchen, and that they are preparing food for those who can least withstand the effects of disease germs which so readily get into the milk through carelessness. These disease-producing germs grow and multiply rapidly in warm milk and do not increase appreciably in milk that has a temperature below 50° F. The milk should be removed from the stable as soon as drawn from each cow, cooled to 50° or below within a half hour, and held at that temperature until delivery to the home where it is to be used. It is equally important that it be kept cold after reaching the home.

Ordinary dishwashing does not suffice for milk utensils. They should first be rinsed with cold or lukewarm water, washed with

some one of the many good purifying compounds, rinsed and then either steamed or immersed in boiling water. Soap or soap powders should never be used. After sterilizing, they should be inverted in pure air to dry by their own heat. A place free from dust and where there is sunlight gives the very best results. Cotton flannel used with the fuzzy side up makes the best strainer.

The practice of delivering milk dipped from a can at each house is attended with great danger. The paper or other cheap-material bottle, used but once, offers a solution of the problem.

SWINE

By J. G. CURTIS

Hog raising as a business or as an adjunct to the business of the dairyman, fruit grower or general farmer is receiving more attention than formerly for several reasons, chief of which is the high price of pork which has prevailed for several years, with the general belief that the price level of meats of every description is likely to remain high for some time to come, and also the discovery of an effective and practical means of rendering hogs immune from cholera by vaccinating with hog-cholera serum.

Pasture.— It has long been known that hogs make greater gain in weight for the food consumed than other live stock; and it is also known that a certain quantity of grain fed to a hog while on pasture will produce about 50 per cent. more pork than if fed to the same hog penned up and fed grain alone. This means that in New York State, where corn and other grains are proportionately high in price, hog raising to be very profitable is largely a pasture proposition. Even at present high prices of pork, the grower should arrange to have a succession of forage crops or pastures for the main roughage during the summer, and a good supply of clover or alfalfa hay together with roots for succulence to be fed with the corn and other grains during the winter. Legumes should be used in pasturing wherever possible, such as alfalfa, clover, Canada field peas, winter vetch and soy beans. Rye and rape are also good pasture crops for hogs, and the rye should have vetch mixed with it and soy beans should be sown in the cornfield.

Water.— An unfailing supply of fresh water is one of the requisites for cheap pork making. The most satisfactory way of keeping the water from freezing in the winter is to bury a large galvanized iron tank, holding several barrels of water, in the horse manure pile and draw from it as needed.

Salt.— Salt, sulphur and ashes should always be kept before hogs of all ages at all times, also soft coal supplied frequently.

Houses.— Houses or cots should have three tight sides, tight floor and roof, be dry and well ventilated and should be portable.

Lice can be controlled by two or three applications of kresol dip, two weeks apart.

Breed.— The best is the one you like best and that is best suited to your purpose. Pure breeds are most profitable, since part of the surplus stock can be sold at good prices for breeding purposes at small expense and trouble of advertising. Good long-bodied brood sows should be chosen that are prolific, good mothers and good milkers, and they should be allowed to fully develop before farrowing their first litter. Little pigs should be helped, if necessary, to find their place at the udder, their little tusks nipped off the second day, and their ears marked. The floor should be kept free from dust.

Brood sows should have exercise in winter and be fed a growing ration rather than a fattening one, but fed very little for a few days before and after farrowing. The sows should be in good condition and gaining in flesh at time of service. Careful hired men, love for hogs and appreciation of the value of stable manure are some of the requisites of success.

Feeding little pigs.— Skim-milk and ground grain is best of all, but must be fed carefully or scours will result and cause a serious set-back. The milk must be sweet and fed in clean pans, and at nearly the same temperature as the mother's milk, if pigs are nursing the mother. It should never be fed sweet and sour alternately or scours are almost sure to follow. Where skim-milk is not available, a good mixture for very young pigs can be made of one-third each of Red Dog flour, rolled oats, and of equal parts of oil meal and ground flaxseed. To 100 pounds of this mixture there should be added one pound of salt and five pounds of finely pulverized charcoal, made into a thin slop by adding water and fed four times a day when the pigs are small, but never more at a time than they will eat up clean. In making the slop, molasses dissolved in six parts of water may be used, which makes a cheap and good food and is relished by young pigs.

ECONOMICAL STABLE CONSTRUCTION

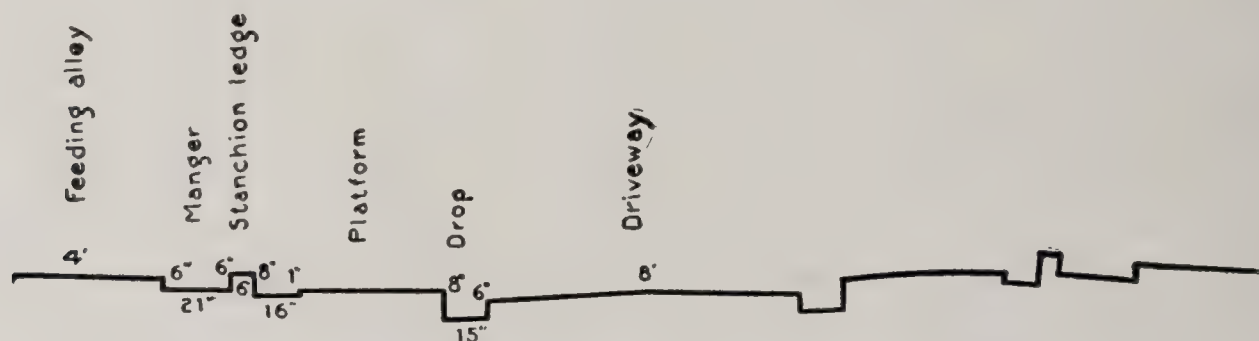
By E. M. SANTEE

It is poor economy to try to produce milk in a stable that is either unsanitary, unhandy or cold. Select a location near the home, protected from prevailing winds where possible, and on dry ground. If more than five cows are to be kept, it should be wide enough for two rows of cows, from thirty-two to thirty-four feet; the ceiling not more than eight feet high — seven and one-half feet is preferable for most places in this state; the length depending upon the number of cows; the width for each cow varying from three feet for the 700- to 1,000-pound cow to three and one-half feet for the longest cows.

There should be a cross feeding alley on either end if more than twenty cows are kept, and in the center of the smaller stable; the air space should be not less than 500 cubic feet per cow when well ventilated, and 600 feet if not so well ventilated. The sidewalls and ceiling should be smooth and tight; the floor tight, but not too smooth. Cement makes an ideal floor if properly put down. The cows should face outward, with a feeding alley about four feet wide in front. The mangers from twenty-one inches to two feet wide and six inches deep, with perpendicular walls and rounded corners, and made as smooth as possible by finishing with a trowel. All other parts of the floor should be finished with a wooden float. The bottom of the manger should be two inches higher than the platform upon which the cows stand. This makes the stanchion ledge six inches high on the manger side and eight inches high on the platform side. It should be six inches wide with well-rounded corners. The cows should stand on a level. This may be accomplished, and at the same time have drainage, by raising the floor one inch at a point from fourteen to sixteen inches back from the stanchion ledge and then giving it a gradual slope to the drop. The width of the platform should vary, according to the size of cows kept, from five feet for the very large cow down to three and one-half feet for the small heifers. This permits the placing of each cow

where she best fits the platform. The drop should be from fourteen to sixteen inches wide, according to size of cows. It should be eight inches deep on platform side and six inches on driveway side. The driveway should be eight to nine feet wide and be raised one inch in the center. It should be well grooved cross-wise about every eight inches.

If muslin ventilation is used, there should be two square feet of cloth for each 1,000 pounds of animal and three square feet of glass per stanchion. If the King system of ventilation is used, there should be five square feet of glass per stanchion. The stanchion should be of the swinging variety with a chain at top and bottom and the frame of galvanized pipe with a partition of the same material, three feet high and three feet back. While the no-loft construction seems slightly preferable from a sanitary standpoint, it is not economical, and in cold climates not advisable, if floor and ceiling are made tight.



CROSS SECTION OF AVERAGE DAIRY STABLE FLOOR.

Scale $\frac{1}{4}$ " to foot.

VENTILATION

By E. M. SANTEE

Good ventilation is fresh air without draughts. Fresh air is needed for its oxygen. Oxygen consumed with carbons of the food or fuel creates heat. To maintain animal heat constant combustion must be taking place in the body of the person or animal. Oxygen is also needed for its purifying properties.

A building in which animals are kept is soon filled with moist air if closed tightly. Moist air soon becomes chilly air if not changed for fresh air.

There are two general systems of stable ventilation; one of air currents in and out, usually known as the King system; and the other of diffusion, known as the diffusion or muslin system.

In the **King System** the air currents must be so divided as not to produce draughts, the fresh air coming in through a flue having its outside inlet near the level of the floor and the outlet into the room near the top, where it mixes with the warm air before reaching the animals. The outlet flue for foul air is carried from near the floor to the roof. This system works very satisfactorily if properly installed and properly operated.

The **Diffusion System**, because it costs less and requires little attention, is more generally adopted in this state. It consists in covering an opening in the room with a cheap, open quality of muslin or cotton cloth, one grade better than cheese-cloth. Use about two square feet to each 1,000 pounds of animal, and place on the south side of the building if possible. Where there is an old, unventilated basement stable with stone walls and too little light, the muslin may be applied to a frame the size of the door, which is left open. In new construction, ventilating openings are made the size of windows and a frame made on which to tack the cloth. This cloth must be brushed as dust accumulates, and should be renewed each fall of the year.

BOVINE TUBERCULOSIS

By DR. J. F. DEVINE

Tuberculosis is a specific disease caused by a germ; it is usually slow in development, and may last from a few months to several years. The definite period of incubation (time elapsing between exposure to a disease and the appearance of recognizable symptoms) is unknown. Danger of infection is greater in poorly lighted, badly ventilated buildings where the germs are present, than where the conditions are sanitary. Well-nourished animals under good sanitary conditions have greater resistance to the disease than those improperly housed and cared for. An animal may appear fat and seem healthy and still be badly infected.

Tuberculosis may attack any part of the body, but is most frequently found in the lymphatic glands, liver, lungs and udder. Bovine animals are very susceptible to it. Some cases are probably curable in the bovine as well as in the human family, but it is not practicable to adopt the same method of treatment, since a dairy cow, to be profitable, must be kept at work producing and reproducing. Neither human beings nor animals can be cured of this disease under the conditions which favored its contraction, hence human beings are usually taken out of factories, congested cities, etc., and put in more favorable surroundings.

There are two methods for determining the presence of tuberculosis—the physical examination and the tuberculin test. Practical ways to get rid of tuberculosis are:

1. Tuberculin test all animals over six months of age, separating the healthy from the diseased and repeating the test in the non-reacting animals as frequently as indications warrant, until it is reasonable to suppose that all of the diseased ones have been detected. Avoid reinfesting the herd by not allowing them to mingle with animals not known to be free from tuberculosis nor to come in contact with infecting agents, such as diseased pastures, stables, cars, stockyards, etc. Raise the offspring from such animals and guard them against infection.

2. Raise the offspring of all animals from your present dairy herd, removing the calves as soon as dropped, putting them in an especially prepared place, keeping them by themselves and feeding them on milk of the dams after it has been properly pasteurized.

For information regarding the disposal of reacting animals, apply to the Commissioner of Agriculture, Albany, N. Y.

CARE OF THE HORSE'S TEETH

By C. W. BRODHEAD

The science of horse dentistry has been sadly neglected in the rural districts, and by that lack of knowledge on the part of horse owners much of the usefulness of the horse is lost.

The mare has 36 teeth, since she is minus the canine or so-called bridle teeth. The male has 40 teeth. In most cases they show themselves any time from two and one-half to eight years of age, and sometimes in early castrations they may not appear in the gelding. The colt begins to shed the milk teeth at two and one-half years, and should have a full mouth when five years old.

The jaws of the horse are peculiar in shape. The under jaw is considerably narrower than the upper. The molars instead of coming in contact by level surfaces meet in such a way that the inside edge is higher than the outside on the lower jaw, while the opposite is the case with the upper jaw. These edges do not wear off, and frequently the cheeks are cut by the sharp points of the teeth on the upper jaw, and the tongue by the sharp points of the teeth on the lower. This can be remedied by properly floating the long points off and giving the teeth a chance to get a full grinding surface. When the colt begins to shed his teeth, the shells or milk teeth may be crowded out by the permanent teeth and are many times crowded against the cheek or tongue, causing the same trouble as the sharp points in older horses. They should be taken out to give the new teeth a chance to come in proper line.

From many causes horses will have split or broken teeth, others may become decayed and hollow, which it is necessary to extract. Every year or two the tooth opposite will need to be filed or cut off, as there is nothing to wear against it.

Some breeds of horses are better toothed than others, also horses grazing or fed on hay from low sandy bottoms, especially land overflowed by rivers or creeks, will wear much faster than those grazing or fed on hay cut from hillsides where there is not much grit or sand in the grass. The incisors of a horse that is usually

stabled will not show wear as a horse in pasture a good share of his life. Constant nipping close to the earth brings them in contact with more or less stones and grit. Judge a horse for usefulness by his molars and how much they are impaired, giving very little attention to the incisors.

The wolf tooth or rudimentary tooth is supposed by many to be the cause of blindness, but it is rare where this causes enough inflammation to impair the eyesight. In many cases the molars crowd the cheek and cause sores and ulcers.

Scouring, slobbering when driven, dropping partially chewed food in the manger, gnawing the manger, running at the eyes, side lining, tossing the head, periodical balking, spasmodic colic, indicate that the horse's teeth need attention. Also painful mastication and resultant indigestion, the primary cause of most stomach troubles of the horse, is due to defective teeth. Take care of the old horse's teeth and be sure to look well to the colt's teeth during the shedding period.

ESSENTIAL POINTS IN EGG PRODUCTION

By E. M. SANTEE

The five vital points in egg production are:

1. Constitutional vigor.
2. Hopper feeding.
3. Sufficient lime and grit.
4. A natural molt.
5. Grinding part of the feed.

Constitutional vigor is obtained by careful selection of the breeding stock; by breeding from hens and not pullets; by good ventilation, and by cleanliness of food and litter. The good candidate for the breeding pen is the busy hen and the active, gallant male bird — the one that is up first in the morning and last to roost at night; the good feeder; the one whose body is evenly balanced upon the legs, with the long keel, the deep, broad chest, the bright eye, the short, stout, well-curved beak and erect tail.

The house should be as tight as possible on three sides, and as open as possible, above three feet from the floor, on the south side. This opening should be provided with a muslin-covered frame door to let down in stormy weather.

A hen cannot do her best unless there is some time during the day that she may eat all she wants. Ground feed in a hopper is the ideal way of meeting this want.

The ordinary feeds do not contain sufficient lime to provide the shell for a maximum egg yield. This requirement is met by keeping ground oyster shells always before the hen. Ordinary pebbles are too soft to grind out the large grist required by the busy hen; hard grit should be supplied summer and winter.

The good layer is a late molter, and the forced early molt lessens egg production.

It is impossible for a hen to grind the feed required for the largest yield. Careful experimenters have found that at least half of the feed should be ground. The larger the producer, the more of the feed should be ground; therefore the morning

ration of whole grain should be a spare one to the heavy layers, that they may be induced to eat more ground feed from the hopper.

At Cornell, where Professor Rice and his co-workers have obtained such fine results, they use a ration of mixed whole grain to be fed in the litter early in the morning, sparingly, and late in the afternoon in a trough, as follows:

BY WEIGHT		BY MEASURE	
Wheat	60 lbs.	Wheat	32 qts.
Corn	60 lbs.	Corn	36 qts.
Oats	30 lbs.	Oats	30 qts.
Buckwheat	30 lbs.	Buckwheat.....	20 qts.

The buckwheat is cut out of the summer ration.

The following is the ground feed for the hopper:

BY WEIGHT		BY MEASURE	
Corn-meal	60 lbs.	Corn-meal	57 qts.
Wheat middlings	60 lbs.	Wheat middlings	71 qts.
Wheat bran	30 lbs.	Wheat bran	57 qts.
Alfalfa meal	10 lbs.	Alfalfa meal	20 qts.
Oil meal	10 lbs.	Oil meal.....	8 qts.
Beef scrap	50 lbs.	Beef scrap	43 qts.
Salt	1 lb.	Salt	½ qt.

This ration should be supplemented by a green food every day, which may be obtained from beets, cabbage, sprouted oats, green clover or a grass range.

CARE OF ORCHARDS

By EDWARD VAN ALSTYNE

Financial possibilities of apple growing are greater than of ordinary farm crops. The apple area is limited; it is difficult to produce good fruit, owing to insects and diseases; the cost of transportation prevents competition by western growers; the number of consumers is increasing; cold storage, refrigerator cars and steamship facilities allow wide distribution.

Varieties selected should be adapted to the locality and an accessible market, and for the most part of a red color; a distinction should also be made between a family and a commercial orchard, and novelties avoided.

Selection of trees.—Dwarf trees are unsatisfactory. Low-headed trees are hardier, suffer less from wind, are picked at less expense, bear earlier, and are sprayed more easily and economically.

Pruning should be just sufficient to keep the tree shapely and open to the sun. Pruning trees when dormant encourages growth; when in full leaf, fruitfulness.

Cultivation.—Hoed crops, which are better than fillers, may be planted in rows at some distance from the trees. The orchard may be seeded down occasionally with clover, but not left in sod more than one year.

Shallow plowing in early spring is best, with enough cultivation to conserve moisture and destroy weeds. Sow a cover crop in midsummer, whether late or early depends on the condition of the trees,—buckwheat, oats, rape, turnips or rye, if trees are growing rank; a leguminous crop, if tree growth is desired. Winter vetch promises to be ideal, but difficult to establish. Sod orchards, except on land which cannot be cultivated, belong to a past generation.

Fertilizing.—No manure or fertilizer should be put about the root of a tree when planted; a coarse mulch may be spread on the surface of the ground. When trees begin to bear, apply manure as far out as the branches extend. Before using com-

mercial fertilizers extensively, experiment with different chemicals, singly or combined, and be guided by results. A liberal application of nitrate of soda to old trees gives good results.

Spraying must be thorough and intelligent. See Circular 58 on "Injurious Insect Pests, Fungous Diseases and Spray Formulæ," which may be obtained by addressing the State Department of Agriculture, Albany.

SOME ORCHARD INSECT PESTS

By E. P. FELT

The San José scale, a circular, black or grayish and yellowish scale less than one-tenth of an inch in diameter and producing a reddish discoloration of adjacent green tissues, is a most important pest. Thorough spraying in early spring, preferably just before the buds swell, with a lime-sulphur wash testing about 4½ or 5 degrees Baumé is a standard and most effective treatment. Miscible oils are preferred to the lime-sulphur wash by some, and if used should be applied in the spring.

The oyster scale and the scurfy scale are common pests which occasionally become abundant. Spray with a kerosene emulsion, the standard formula diluted with nine parts of water, or a whale-oil soap solution (one pound to six or seven gallons), the latter part of May or early in June when the minute young are crawling.

The early leaf feeders, such as the bud moth, the two case-bearers, the cankerworms and the apple tent caterpillar, are sometimes excessively abundant and destructive. They may be controlled by thorough spraying just as the young leaves are appearing, with arsenate of lead, using at least two pounds to 50 gallons of water. A fungicide, bordeaux mixture or a dilute lime-sulphur wash may well be added to the poison for the purpose of safeguarding against fungous attacks.

The codling moth is the most important enemy of the fruit grower, since it may infest 30 to 50 per cent. or more of the crop. The eggs are laid upon the leaves or the fruit about ten days or two weeks after the trees blossom, and the young caterpillars enter the apples about three weeks after the falling of the petals. Experience has shown that by far the most effective treatment is the application within a week or ten days after the blossoms fall, provided the spray is thrown down into the upturned blossom ends and practically every fruit hit. Experiments in the Hudson Valley, under normal crop conditions, resulted in from 95 to 98 per cent. of sound fruit; whereas a spray three weeks later was only about one-half as effective in reducing the number of wormy

apples, perhaps three-fourths of the latter being entered at the end. By far the best poison is arsenate of lead (15 per cent. arsenic oxide) applied at the rate of two pounds to 50 gallons of water.

Plant lice are most liable to be numerous in cool, backward springs, and should be checked early by spraying with a kerosene emulsion (1-9), whale oil soap solution (1-6 or 7), or a tobacco preparation. Red bugs curl the tender foliage in early spring and succumb to black leaf 40 (1-800), just after the blossoms open, the time to make the first application for apple scab. It is well to add tobacco to the regular spray for the codling moth.

SMALL FRUITS

By WILLIAM HOTALING

Small fruits should be laid out in long rows so that they may easily be kept clean with a horse. They require a well-drained location, with preparation of the ground as for a good corn crop. Set bush and cane fruits six feet apart, allowing four feet between each plant. Plant moderately deep, with roots in a natural position and the earth well pressed down around them.

Cut back well at time of setting to give strong, stocky plants. Cane fruits should have old canes cut out as soon as fruiting season is over, and the following spring thinned to a proper stand and somewhat shortened in. Pinching back in summer is a bad practice where the snow drifts over the plants. Currants and gooseberries require but little pruning until three years old, after that, as much good three-year wood as the bush will carry is a good guide.

For family use: Red berries, Marlboro and Cuthbert; Black raspberries, Kansas and Columbian Purple; Blackberries, Agawam and Eldorado; Currants, Wilder and Perfection (red), Imperial (white); Gooseberries, Downing.

Strawberries need rich soil, thoroughly prepared. Set only young plants. The profit of the second-year bed depends largely upon its condition the preceding fall. It is most economical to cultivate little and often, mulching for winter even if straw must be bought for this purpose. In spring remove mulch from rows and allow it to remain between the rows. This keeps down weeds, helps retain moisture and keeps berries clean.

Grapes are one of the healthiest and easiest of small fruits to grow. They should be planted deep. Varieties like Green Mountain, Jessica, Wyoming Red, Lucille, Champion and Moores Early are good for planting where season is short.

THE FARMER'S GARDEN

BY WILLIAM HOTALING

No part of the farm will yield such large returns in health and money value as a good garden.

THE SOIL AND ITS PREPARATION

A sandy loam is the natural garden soil, but good garden vegetables may be successfully grown on any farm. Lime and humus should be worked into heavy clays to lighten them, the larger stones removed from rough land, all soils well-drained and enriched with rotted manure or a commercial fertilizer. Garden crops are very dependent upon the amount of available moisture. Where irrigation is not practical, cultivation must be depended on largely to conserve the soil moisture. Long and continuous rows that will allow working with a horse with little turning, secures the maximum benefit with the minimum amount of time and labor.

SELECTION OF VARIETIES

This should always be done with two points in view, namely, quality and a good succession. Variety should also be taken into consideration, since a number of vegetables to choose from is much better than an abundance of one or two.

Asparagus.— This is the first vegetable ready for use. It is always desirable to have a good bed of this. Space forbids directions for growing this vegetable, but all questions by those interested will be cheerfully answered by the writer.

Lettuce.— For early cutting nothing is better or more reliable than Black-seeded Simpson, and for a head lettuce Hanson is one of the old standbys. Lettuce has not the ability to send its roots in hard soil and is a rank feeder, therefore it requires a rich, loose soil.

Radishes.— These must be grown quickly to be at their best. White Tipped Scarlet for early, and Giant Crimson Turnip for late planting are very satisfactory.

Peas.— There are many good kinds, but the person who plants early Alaska, Premium Gem and Dwarf Champion will make

no mistake. The smooth may be planted earlier than the wrinkled varieties. Ashes are very beneficial to this crop.

Beans.—The Spotted Wax is a standard. Those who have failed with limas should try Henderson's Bush Lima. It is hardy and prolific and succeeds where any common bush bean will.

Tomatoes.—Select Earliana for early and Stone or Ponderosa for late tomatoes. The plants should be large, set deep in the ground and protected from cold northwest winds.

Cucumbers, Squashes, and Melons.—Unless the ground is of unusual richness, a liberal amount of well-rotted manure put in the hill will pay. The earlier they are started the better, except cucumbers for pickles, which will do the best if planted late in June.

Carrots, Parsnips, Beets, Onions, etc., may all be treated about the same. Sow the seed as soon as the ground can be worked; parsnips especially, unless sown in cool, moist ground will not germinate well. Plant onion sets for early use. In sowing any of the root crops, it will be found of great advantage to add a few radish seeds. These come up quickly and mark the rows, making it possible to begin cultivation early.

Sweet Corn.—Plant in abundance, and because a good garden spot is so valuable, the field is preferable, as there is nothing there to hinder liberal planting. Golden Bantam for a true sweet, early corn, Champion for second early and Evergreen for late are excellent.

HOME SANITATION

BY E. M. SANTEE

About 200 years ago Antony Von Leeuwenhoek discovered a world of infinitesimal things that lived and died and fought for existence, and that had a marked influence upon the activities of the human family. In 1862 it was found that these lowest forms of life also affected human health, and now many believe that all illness is due to their activities. It is certain that all infectious diseases are so caused. These forms are so small that it requires 60,000 of some of them placed side by side to cover one inch of space. They are vegetable seeds that require the same conditions as other vegetable seeds for their growth and development, namely, heat, moisture, nutriment; deprived of any of these they cannot grow. These germs have no great power of movement, so to do harm they must be carried about by the dust of the air, the water we drink or the food we eat. The disease-producing germs are principally found in the wastes of our bodies. The three things, then, that may be most profitably studied in this connection are: The air we breathe, the water we drink, the disposition of the wastes from our bodies.

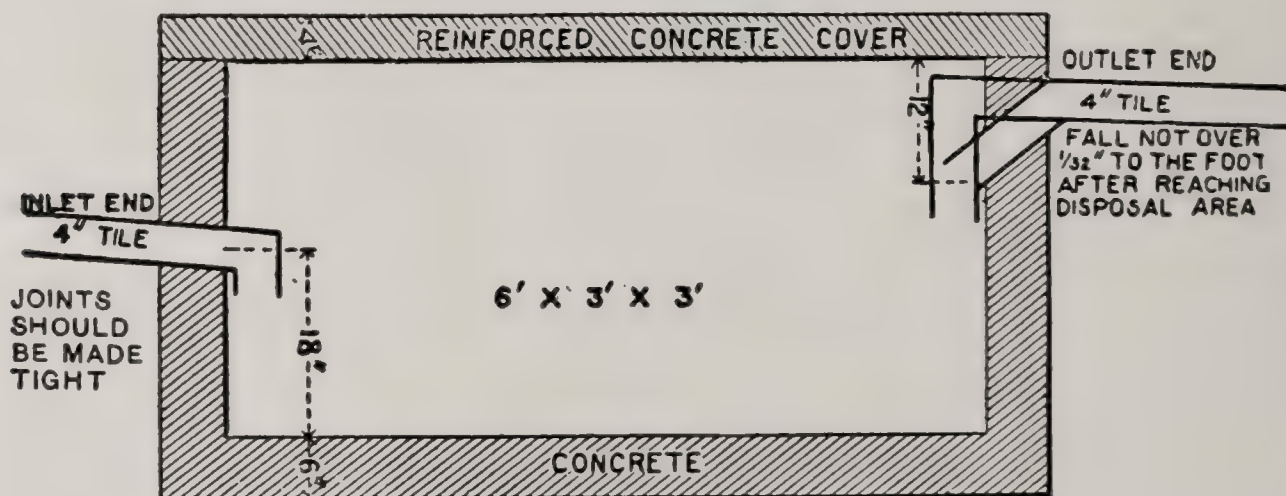
We must have fresh air for the oxygen it contains, first, because it must be combined with the carbons of our food to produce the heat that keeps us warm, and second, for its purifying properties. We usually get sufficient oxygen during the day, but at night when we sleep we shut our rooms tight and it is then that the greatest harm is done. Good ventilation is fresh air without draughts. The best way to obtain it is to strain the air through a cloth screen on the window. Ordinary cheap muslin, one grade better than cheese-cloth, is best.

The purity of the water we drink depends upon the protection of its source and thoroughness of its straining as it filters through the earth. The nearness of a cesspool, the unprotected spring and the badly-covered well are the chief sources of pollution. The usual disposition of sewage on the farm is fraught with great danger. It makes an excellent breeding and feeding place for flies, is a menace to the water supply and contaminates the air.

The old-fashioned shallow, vaulted earth closet should be banished and replaced by the septic tank and modern inside plumbing.

A good septic tank, that needs no cleaning, costs less than a cess-pool and is effective, safe and satisfactory. It is a simple tight box buried under ground, having a pipe to bring the sewage and another to carry off the liquids left after the germs have consumed the animal and vegetable solids. For a family of six or less, the box should be 3 feet deep, 3 feet wide and 6 feet long, adding one foot to the length for each extra person. Concrete is the best material. The walls should be about 8 inches thick, and the cover reinforced with iron. The inlet pipe should be in the middle of one end and have an elbow to deflect the sewage downward; the outlet 12 inches from the top of the opposite end; all pipe 4 inches in diameter. That conducting the sewage to the tank should be of the bell pattern with the joints tightly cemented; that at the outlet end should be land tile with the same open joints as the ordinary tile drain. Lay this tile in a ditch 12 inches deep, as nearly level as possible and still have a continuous fall. Allow eight feet to each person in the family, if the soil is loose, and about double that length if the soil is clay.

The tank will not freeze in the coldest part of this state; it needs no ventilation. Disinfectants should not be used. They destroy the bacteria which feed on the sewage.



Septic Tank for Family of Six or Less.

HOUSEHOLD ENTOMOLOGY

BY E. P. FELT

We may conveniently divide household insects into fabric pests, food pests and disease carriers. The two carpet beetles and the several species of clothes moths are the most important fabric pests and are familiar to many through their operations. Carpet beetles may be carried into the house with flowers. These insects thrive in undisturbed woolens, such as carpets in attics, garments in closets and carpets on floors. Eliminate useless woolens in storage, put others in tight boxes with naphthalene or store in cedar chests. Use rugs rather than carpets. Frequent airing and brushing are very effective as deterrents.

The principal food pests are ants and cockroaches, the latter mostly urban. Ant nests in the vicinity of dwellings may be destroyed with boiling water or even kerosene. Ants may be poisoned with a sweet syrup containing $\frac{1}{8}$ to $\frac{1}{4}$ per cent. sodium arsenite. Have this prepared by a drug clerk, saturate sponges with this, put them in pint fruit jars having nail holes in the top and lay the jars on one side in the haunts of the ants. This preparation is a deadly poison.

The pestilential cockroach may be destroyed with a mixture of three parts of flour and one part of plaster of paris placed near a water supply. Sodium floride scattered about their haunts is also reported effective.

The cereal feeders, such as the Indian-meal moth and small grain beetles, may occur in prepared breakfast foods. Bean and pea weevils live only in beans and peas. The abundance of any of these pests indicates a nearby food supply, which latter should be located and all infested material burned.

House flies and mosquitos are the important disease carriers of the home. The former breed in decaying organic matter, especially horse manure, and may be largely eliminated by cleaning up the premises, though neighborhood cooperation is usually a prime essential. This pays, especially the proper care of infected matter, since the fly is a well-known carrier of typhoid fever and other

infections of the digestive system. Mosquitos must have nearby water and may be controlled by doing away with small pools and other standing water. Fleas occur with domestic animals and may be destroyed by spreading five pounds of flake naphthalene on the floor of the average room and leaving it over night. Finally, the malodorous, flattened inhabitant of sleeping apartments is occasionally found, though rarely where metal bedsteads are used. Cracks and walls in infested houses should be filled and, if necessary, the apartment fumigated with sulphur candles, using two pounds to 1,000 cubic feet of space and keeping the room closed about twenty-four hours.

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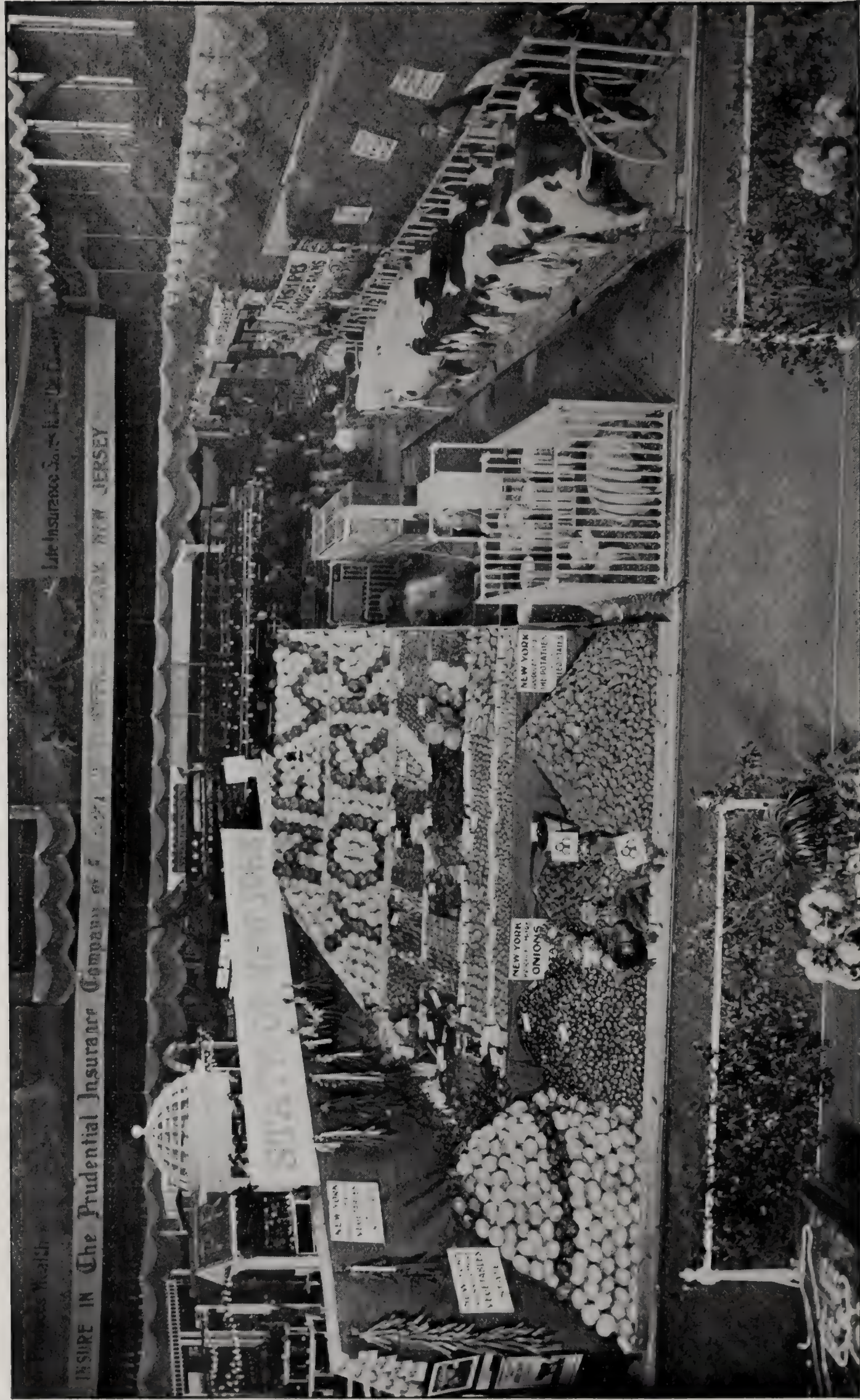


FIG. 5.—VEGETABLE AND LIVE STOCK EXHIBIT, LAND SHOW OF 1912.

STATE OF NEW YORK
DEPARTMENT OF AGRICULTURE
CALVIN J. HUSON, Commissioner

Bulletin 43

Farms for Sale or Rent
in New York

(Occupied and Unoccupied)

Compiled by
Bureau of Statistics and Farm Lands
R. R. Riddell, Chief

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PREFACE

The information contained in the following pages descriptive of one thousand farms for sale or to rent was collected by the Department of Agriculture under authority of the Agricultural Law with the idea of "promoting agricultural production within the state." It should be clearly understood that none of these farms is the property of the state; neither does the state sell them nor act as an agent in their sale.

Many of the farms listed are among the lower priced farms of the state, but doubtless offer excellent advantages and opportunities to the home-seeker possessing some knowledge of agriculture.

The farms of New York State are, as a rule, capable of producing a wide range of valuable crops, but it should be noted that they are not to be handled in the same manner as are the great one or two crop farms of the west.

The variety and volume of the crops produced upon the soils of New York State are greater than can be found elsewhere, and by reason of the farms being within short, easy and cheap shipping distance over good roads and of rapid transportation to the great cities of the state, the money value of these crops is correspondingly increased.

One-eleventh of the population of the United States lives in New York State. There are seven millions of people living within from one to four hours' ride of the farms of New York State who are consumers and not producers of agricultural products, and one-half the population of the United States is within twenty-four hours by fast freight.

In regard to the advantages and opportunities afforded by the agricultural conditions of New York State we will refer to a statement recently made by Hon. James Wilson, Secretary of Agriculture of the United States. This statement was made after a careful and extended personal inspection of the farms and farm conditions in New York State.

"Hereafter when a young man with a few hundred dollars asks my department in what section he can engage in farming to the best advantage, I shall ask that he be directed to the possibilities existing throughout New York State. There you have one of the most beautiful sections for farm operations, for homes, to be found in this great country. I am astonished; it is far beyond my understanding why the people have gone away and left these farms, these rich valleys, well timbered hills, with numberless streams of splendid water on every hand — ideal for grazing and stock rais-

ing, for the production of fruits and dairy products. You have good schools, churches, substantial towns, and intelligent people, and some of the best and largest markets of the world at your very door. Your soils are not exhausted; they are strong, and, with few exceptions, are as productive as they ever were."

A few months later Secretary Wilson completed another trip through certain sections of the state and at its conclusion expressed his opinion of New York State farm lands in the following words:

"The cheapest farm lands in the United States to-day, when nearness to good markets, price of land and all other farm conditions are considered, are east of the Alleghanies, and the unused, low priced farm lands of New York State are the best investments in America."

The Department of Agriculture will furnish information concerning farm lands and the opportunities for agriculture in New York State to those who desire to investigate the matter. Letters of inquiry should be addressed to the Department of Agriculture, Albany, N. Y.

CALVIN J. HUSON,
Commissioner.

R. R. RIDDELL,
*Chief, Bureau of Statistics
and Farm Lands.*

FARMS THAT MAY BE RENTED, INDICATED BY NUMBER

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NEW YORK FARMS

ALBANY COUNTY

Area, 527 square miles. Population, 173,666. Number of farms, 3,146. Average value of farm lands per acre, \$49.61. Annual total precipitation, 38.77 inches. Annual mean temperature, 50.3°. County seat, Albany.

Located in the eastern part of the state on the western bank of the Hudson River.

Surface features are undulating and hilly, with a general drainage to the east.

The soil upon the intervalles is a deep, rich alluvial loam. A considerable extent of the northeastern portion of the county is sand with strips of clay along the streams. Between this sand region and the foothills of the Helderbergs is a belt of clay and gravelly loam, very productive. Rye, barley, hay, potatoes, vegetables, dairy products and poultry are the chief products. The county is traversed by excellent lines of communication, by steam, water and trolley.

The educational and religious advantages are, like all of the counties of the state, unsurpassed. Besides the excellent city schools there are 146 district schools, and a State Normal College located at Albany. There are about 1,000 miles of state and county improved roads.

The value of all the farm property is \$17,742,896, an increase of 11.8 per cent. since 1900. Two thousand nine hundred and forty-six farms report domestic animals consisting of dairy cows, 13,483; horses, 8,780; swine, 13,607; sheep, 17,070; poultry, 171,339. There are fourteen agricultural organizations for the purpose of promoting farming interests and social life on the farm.

TOWN OF BERNE.

Population 1,753

No. 1—Farm of 185 acres, located $4\frac{1}{2}$ miles from Berne P. O., R. D. 2; 14 miles from railway station at Altamont, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school; $\frac{3}{4}$ mile from Methodist church; $4\frac{1}{2}$ miles from other Protestant churches; $4\frac{1}{2}$ miles from butter factory. Highways somewhat hilly but in good condition. Surface of farm level. Altitude, about 1,800 feet. Soil, heavy loam. Acres in meadow, 100; in natural pasture, 50; in timber, 40; hemlock, beech and maple. Acres tillable, 140. Fruit, 50 apple trees. Best adapted to buckwheat, barley, oats and hay. Fences, stone wall and wire, fair condition. House, 28x36; two stories; with wing 24 feet long, first-class condition. Outbuildings, barn 40x50 with shed, nearly new, first-class condition; shed 40x24 feet with stable and henhouse, 9x21. Watered, house by well, barn by running water, fields by springs. Unoccupied. Reason for selling, ill health of owner. Price, \$2,500. Terms, \$1,000 down; balance on easy payment. Address Adelbert Shoufelt, Berne, N. Y.

No. 2—Farm of 114 acres, located 4 miles from Berne P. O., R. D. 2; 12 miles

from railway station at Altamont, on line of D. & H. R. R.; 1 mile from school; 4 miles from Protestant churches; 3 miles from milk station. Surface of highway level. Altitude, 700 feet. Surface of farm rolling. Heavy loam soil. Acres in meadow, 20; in natural pasture, 20; in timber, 15; oak, maple and hemlock. Acres tillable, 80. Fruit, apples, pears, plums, etc. Best adapted to oats, rye, buckwheat and hay. Fences, wire and stone wall. House, about 20x30 with wing and woodhouse, good condition. Outbuildings, barn 40x38 with shed attached. Watered, house by well; barn and fields by springs. Occupied by owner. Reason for selling, advanced age of owner. Price, \$15 per acre. Terms, 50 per cent. down; balance on easy payments. Address Jacob Hilton, Berne, N. Y.

TOWN OF BETHLEHEM

Population 4,413

No. 3—Farm of 105 acres, located 1 mile from Delmar P. O. and railway station, on line of D. & H. R. R.; 1 mile from school and Protestant churches. Highways somewhat hilly. Nearest large city, Albany; 5 miles distant, population, 100,000; reached by rail and highway. Surface of farm, rolling.

Soil, clay loam. Acres in meadow, 35; in timber, 7; second growth, hardwood. Acres tillable, 95. Fruit, 100 apple, 30 plum, 20 pear, 15 peach and 10 cherry trees; also currants, raspberries, etc. Best adapted to hay, grain, corn and potatoes. Fences, wire, fair condition. House, 26x30 with wing 25x30. Outbuildings, barn 40x50, wagon house 25x25, shed 40x20, shed 60x26. Watered, house by well and cistern; barn by cistern; fields by well and springs. This farm is located $\frac{1}{2}$ mile from Helderberg Mountains; 6 miles from Hudson River; Normanskill Pond on one side of farm. Occupied by owner. Reason for selling, owner is engaged in other business. Price, \$100 per acre. Terms, part cash. Address G. W. McCormick, Delmar, N. Y.

TOWN OF COLONIE

Population 8,385

No. 4 — Farm of 100 acres, located $3\frac{1}{2}$ miles from Cohoes P. O., R. D. 1; 1 mile from Stop 33 on line of Schenectady & Troy R. R.; $\frac{1}{2}$ mile from school; 3 miles from Methodist church; 5 miles from Troy; 9 miles from Albany; 10 miles from Schenectady. Highways, very good. Nearest city, Cohoes, population 24,709, reached by highway. General surface features of farm, rolling. Nature and quality of soil, very best. Ninety acres in meadow; 5 in timber; 5 in pasture; 90 acres tillable. Fruit, 100 apple trees. Soil best adapted for hay and grain. Fences, good, wire. Fourteen-room brick house. Four good-sized barns and 3 small ones. Running water in house; same in barn; always plenty in fields. Two miles from the Mohawk River. Occupied by owner. One of the best dairy farms in the State; always had 25 to 50 cows. This place will cut from 75 to 100 tons of hay yearly. Price, \$10,000. Terms cash. Owner will rent for cash. Address Harvey Pitts, Cohoes, N. Y.

*No. 5 — Farm of 40 acres, located 4 miles from Watervliet P. O.; 4 miles from railway station at Watervliet, on line of D. & H. R. R.; $\frac{1}{4}$ mile from school; 1 mile from churches. Highways good; 1 mile from two State roads. Nearest large cities, Troy, Albany and Cohoes, distant 4-5 miles, reached by highway. Surface of farm, level. Soil, good sandy loam. Acres in meadow, 35; in timber, 4, second growth; all tillable. Fruit, 300 apple trees, old but good; 50 plum, cherry

and pear trees. Best adapted to fruit, berries and garden truck. Fences, wire, in fair condition. House, 14 rooms, in excellent condition. Barns, large, new and excellent; 2 big poultry houses. Watered, house and barns by wells. Occupied by owner. Reason for selling, unable to work farm. A very fine place near the best markets. Price, \$6,000. Terms, \$1,000 cash, or will take city property in exchange. Address Frank H. Knox, agent, 469 State Street, Schenectady, N. Y.

TOWN OF GUILDERLAND

Population 3,333

*No. 6 — Farm of 71 acres, located $\frac{3}{8}$ mile from Guilderland Center P. O.; $\frac{3}{8}$ mile from railway station at Guilderland Center on line of West Shore R. R.; $\frac{1}{4}$ mile from school and churches; $\frac{3}{8}$ mile from milk station; $\frac{1}{4}$ mile from State road. Highways, excellent. Nearest cities, Schenectady, 6 miles distant, and Albany, 11 miles distant, reached by highway. Surface of farm, level. Soil, clay loam. Acres in meadow, 30; in natural pasture, 10; in timber, 6, large pine, hemlock and oak; acres tillable, 65. Fruit, 150 apple trees, thrifty and bearing, 200 set four years. Best adapted to hay, grain, corn, fruit. Fences, wire, in good condition. House, 10 rooms, in good condition. Outbuildings: barn, 32x46; barn, 24x65; barn, 24x26; cow barn, 14x16; two sheds; all in good condition. Watered, house and barns by well; fields by brook. Fine view of Helderberg Mountains. Occupied by tenant. Reason for selling, owner lives in city. Price, \$6,000. Terms, \$3,500 cash or might exchange for city property. Address F. H. Knox, agent, 469 State Street, Schenectady, N. Y.

No. 7 — Farm of $40\frac{1}{2}$ acres, located 3 miles from Altamont P. O., R. D. 2; $1\frac{1}{2}$ miles from railway station at Meadowdale, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school; 2 miles from Reformed and Lutheran churches. Highways, good. Nearest large village, Altamont, population 700, 9 miles distant; Schenectady, 11 miles distant; Albany, 13 miles distant; reached by both railroad and highway. Surface of farm, nearly level. Soil good. Acres in meadow, 30; in timber, 1; all tillable. Fruit, 40 plum, 40 apple, 19 cherry, 10 peach and 12 pear trees. Best adapted to corn, rye, hay and oats. Fences in

* Farm is in hands of agent or real estate dealer.

good condition. House, 21x40, in fine condition. Main barn, 26x40; wagon house attached, 18x50; horse barn, 18x40; stables attached; hogpen, 15 feet square; henhouse, 12x30; all in good condition. Watered, house, by wells and never-failing springs. This property is located 1 mile from the Helderberg Mountains, 4 miles from Thompson's Lake, and 2 miles from Indian Ladder. Occupied by owner. Reason for selling, advanced age of owner. Price \$3,000. Terms, \$1,500 down, balance on mortgage. Address Aaron Van Schaack, Altamont, N. Y., R. D. 2.

TOWN OF KNOX

Population 1,007

No. 8—Farm of 200 acres; 1½ miles from P. O., R. D.; 5 miles from railway station at Altamont, on line of D. & H. R. R.; 1½ miles from school; 1½ miles from churches and 3 miles from butter factory. Highways, good. Nearest village, Knox, population 200, 1½ miles distant, reached by highway. Surface features, rolling and level. Soil, fertile loam. Acres in meadow, 80; in natural pasture, 25; 15 acres in rye; in timber, 10, hemlock, beech, etc.; acres tillable, 190. Fruit, about 50 apple trees, pears and currants. Best adapted to oats, rye, buckwheat, hay, potatoes and corn. Fences, wall and rail, in fair condition. House, 20 rooms, 20x50, in fair condition, built for two families. Outbuildings: main barn, 40x54; hay barn, 42x36; wagon house, 40x20; shed and henhouse, 24x50; in fair condition. Watered, house by well and cistern; barns by pond and well; fields by ponds. This property is 4 miles from Thompson's Lake and 3 miles from Warner's Lake. Reason for selling, to settle an estate. Price, \$3,750. Terms, half down, balance on mortgage. Address Millard Frink, Altamont, N. Y.

No. 9—Farm of 60 acres; located 6 miles from Delanson P. O., R. F. D. 3; 4 miles from railway station at Altamont, on line of D. & H. R. R.; 1 mile from school and Protestant Church; 6 miles from butter factory. Highways somewhat hilly but good. Nearest large village, Altamont, 4 miles distant, reached by rail and highway, population 700. Surface of farm rolling. Altitude 1,000 ft. Soil, clay loam. Acres in meadow 25, in natural pasture 10, in timber 5, hemlock, beech, birch and maple. Acres tillable, 50. Fruit, 30 apple,

10 pear, 10 cherry and 6 plum trees. Best adapted to hay, oats, rye, buckwheat, potatoes, etc. Fences, principally stone wall, poor condition. House 18x42 with ell 18x36, one and one-half story, fair condition. Outbuildings: hay barn, 40x50, containing stalls for 4 horses, 6 cows and granary; shed and loft, 21x42; wagon house, 21x35; all in fair condition; hen house, 12x80, good condition; hen house, 12x20; smoke house; hog house, 14x22. Watered, house and barn by well, fields by pond and stream. This farm is 6 miles from Thompson's Lake and 7 miles from Warner's Lake. Occupied by owner. Reason for selling, owner is unable to work farm. Price, \$3,000. Terms, one-half cash, balance on mortgage if desired. Address Mrs. A. D. Wright, Delanson, N. Y., R. D. 3.

TOWN OF NEW SCOTLAND

Population 2,834

No. 10—Farm of 80 acres; located 2½ miles from Feura Bush P. O., R. D. 1; 3 miles from railway station at Feura Bush, on line of W. S. R. R.; 1 mile from school and Protestant Church; 2½ miles from butter factory. Highways, ¼ mile good dirt road, remainder state road. Nearest city, Albany, 11 miles distant, reached by rail and highway. Surface of farm rolling. Soil, part loam, some stone but good land. Acres in meadow 16, in timber 10, hemlock, pine and hardwood, some first and some second growth. All tillable except woodland. Fruit, a few apples, pears and plums. Best adapted to rye, corn, oats and hay. Fences, wire and board, part in good condition, remainder in fair condition. House, 30x35, 2 stories, kitchen and woodhouse attached, fair condition. Outbuildings: barn 30x48, fair condition; wagon house, corn house, tool house, hog house, shed, horse stable attached to barn, all in fair condition. Watered, house by well, barns by spring and creek. This farm is 2½ miles from Lawson's Lake, 3 miles from foothills of Helderberg Mountains. Occupied by tenant. Reason for selling, owner unable to work farm. Price, \$40 per acre cash, or \$45 per acre, one-half down, balance on long time. Address J. H. Slingerland, Feura Bush, N. Y., R. D. 1.

*No. 11—Farm of 35 acres, located ⅛ mile from Delmar P. O., R. D. 1; 2½ miles from railway station at New Scotland, on line of W. S. R. R.; ½ mile from school, 3 miles from Protestant

* Farm is in hands of agent or real estate dealer.

Churches, 6 miles from butter factory. Highways, $1\frac{1}{4}$ mile good dirt road, remainder state road. Nearest city, Albany, 10 miles distant, reached by highway. Surface of farm rolling. Soil, limestone, good. Twenty acres in timber, pine, hemlock and oak. Acres tillable, 15. Fruit, 35 apple, 25 pear, 130 plum, 12 peach, 5 cherry trees and 4 grape vines. Best adapted to fruit, gardening, etc. Fences in poor condition. House, 6 rooms, good condition. Outbuildings: barn, 20x30, poor condition; pig pen, 10x10. Watered, house and barn by well. This farm is 5 miles from Lawson's Lake, $5\frac{1}{2}$ miles from Thompson's Lake and $6\frac{1}{2}$ miles from Warner's Lake. Reason for selling, owner lives too far away to attend to farm. Price, \$600. Terms cash. Address Valentine Zink owner, 1124 Albany Street, Schenectady, N. Y., or Frank Weidman, agent, Delmar, N. Y., R. D. 1.

No. 12 — Farm of 180 acres; located 4 miles from Voorheesville P. O. and railway station, on line of D. & H. and W. S. R. R.; $\frac{1}{2}$ mile from school; one mile from Protestant Church. Nearest city, Albany, 12 miles distant, reached by rail and highway. Surface of farm quite level. Soil, mostly limestone. Acres in natural pasture 10, in timber 40, hemlock, pine and hardwood. Acres tillable, 120. Fruit, a few apples. Best adapted to grain and hay. Fences in fair condition. Large house. Outbuildings, large and in fair condition. Watered, house by wells, barn by pond, fields by springs. Occupied by tenant. Reason for selling, owner a widow and cannot work property. Price, \$3,500. Terms easy. Address Ellen Hendrickson, Clarksville, N. Y.

No. 13 — Farm of 160 acres; located 6 miles from Voorheesville P. O., R. D. 2; 5 miles from railway station at New Scotland, on line of W. S. R. R.; 1 mile from school; 3 miles from churches (Reformed and Methodist); 6 miles from butter factory. State road. Fifteen miles from Albany. Surface of farm rolling. Soil, gravel loam. Acres in meadow 25, in natural pasture about 50, in timber 20, yellow pine, hemlock and beech. Acres tillable, 120. A few fruit trees. Adapted to buckwheat, oats, potatoes, hay, etc. Fences in poor condition. Large house, poor condition. No barn. Good size wagon house and hop house. Watered by springs and well. Three lakes within four miles of this farm. This farm is near west side of Helder-

berg Mountains. Reason for selling, owner unable to work farm. This would make a good sheep farm. Price, \$1,000 cash, or \$1,200, half cash. Address Alex. Flansburg, Delmar, N. Y., R. D. 1.

TOWN OF RENSSELAERVILLE

Population 1,609

No. 14 — Farm of 187 acres, 2 miles from Preston Hollow and 14 miles from Middleburg. Roads in the vicinity, good. Nature of soil, sand and gravelly loam. Thirty acres of meadow; 50 acres of natural pasture; 37 acres of timber; about 100 acres tillable. Fruit, orchard of 30 trees. Adapted to all kinds of crops. Altitude, 1,500 feet. Fences, stone, in good condition. House, 30x40, 2 stories, in good condition. Barn, 30x40, 2 stories. Wagon house and sheep barn. Premises watered by spring. Catskill Mountains 12 miles distant. Reasons for selling, poor health of the owner. Price, \$2,500. Terms, half cash. Name and address of owner, J. M. Watson, Preston Hollow, N. Y.

No. 15 — Farm of 135 acres, located 2 miles from Rensselaerville P. O.; 17 miles from Voorheesville station, on line of D. & H., and W. S. R. R.; $\frac{1}{2}$ mile from school; 2 miles from Baptist, Presbyterian and Episcopal churches; 2 miles from butter factory. Highways, good, comparatively level. Nearest village, Rensselaerville, population 400, 2 miles distant, reached by highway. Surface, part level and part rolling. Altitude, 1,368 feet. Soil, loam. Acres in meadow, 45; natural pasture, 15; timber, 20, beech, maple, ash, hemlock; acres tillable, 55. Fruit, 70 apple trees. Best adapted to oats, corn, potatoes, buckwheat and rye. Fences, stone wall and wire, good condition. House, 20x44, kitchen and woodhouse attached, fair condition. One barn, 28x56, shed and hoghouse attached; one, 22x40; one, 30x52, cow shed attached; one wagon house, with granary attached. Watered, house by well; barn by never-failing stream; fields by brooks and streams. This property is $2\frac{1}{2}$ miles from Lake Myosotis, 5 miles from Crystal Lake and 20 miles from the Catskill Mountains. Occupied by owner. Reason for selling, wish to engage in other business. Price, \$1,800. Terms, part cash. This property is located $\frac{1}{2}$ mile from State road; an auto-bus runs from Rensselaerville to Albany. R. D. from Berne passes door. Address Marcus S. Lasher, Berne, N. Y., R. D. 2.

No. 16—Farm of 166 acres, located 2 miles from Medusa and 5 miles from Greenville P. O., R. D. 1; 12 miles from railway station at Cairo, on Catskill Mountain R. R., and 17 miles from West Coxsackie or Ravena, on West Shore R. R.; 1 mile from school; 1 mile from Methodist church; 2 to 5 miles to churches of other denominations; 2 miles from butter factory. Roads, good. State roads from Greenville to Coxsackie and from Rensselaerville to Albany. Nearest city, Albany, population 100,253, distant 30 miles, reached by highway or rail from West Coxsackie. Surface, rolling. Altitude, 1,000 feet. Soil is good clay loam. 20 acres of meadow; 25 acres of natural pasture; about 35 acres of timber, hemlock, maple, beech, white ash, elm, basswood, etc.; acres tillable, 86: There is an old neglected apple orchard of about 3 acres, Newtown Pippins, also a good many younger apple trees, some of which have been grafted while others need topworking and pruning, also a few pear trees. Land is best adapted to dairying, fruit, and all general farm crops. Fences consist of stone walls and considerable new wire fencing. There is a good 2-story house, 26x36, and extensions, 16x30, with excellent cellar. Barn, 30x40, with 30-foot extension, stanchions for 14 head of cattle. Barn 26x60, with 20-foot posts, stalls and carriage room. Hay bay, 26x36. Two-story grain house, 18x26. Two poultry-houses, 8x15 and 15x18. Buildings mostly in good condition, one barn roof needs shingling. House has well and cistern. Barns have wells. Fields have springs, and are also watered by the Eight Mile Creek, running through north west portion of farm. Catskill Mountains 6 or 8 miles distant, and Catskill Creek 4 or 5 miles to the south. Occupied by tenant. Reason for selling, old age of owner. Price and photograph on application. Terms, cash or half cash, with balance on mortgage at 5%. Only 2 miles to one of the best creameries in the State, saw and grist-mills and barrel factory. Address, Eugene Spalding, Greenville, Greene Co., N. Y.

No. 17—Farm of 273 acres, located 2½ miles from Rensselaerville P. O., R. D. 1; 12 miles from railway station at Middleburg, on line of Middleburg & Schoharie R. R.; 1 mile from district school; 2½ miles from high school; 2 miles from Protestant churches; 2½ miles from cheese factory. Highways are smooth and good. Nearest city, Al-

bany, 28 miles distant, by highway (State road); and the village of Middleburg, population 1,114 is 12 miles distant by highway. Surface, mostly level, and little rolling, sloping to the south. Soil, gravelly loam and black soil. 80 acres of meadow; 80 acres of natural pasture; 25 acres of timber, hemlock, ash and maple, of good quality; 180 acres tillable. Has 50 apple trees, 20 pears, 20 plums, plenty of fruit for home use and some to sell. Land is adapted to buckwheat, barley, oats, rye, corn, etc. Fences of woven wire, barbed wire and rail, all in good condition. Good 10-room house, painted, with piazza, and telephone. One barn, 53x44; one, 28x40; sheep house, 18x60; horse barn, 32x28; granary, 16x20; wagon house and wood house, 24x30. House has well and spring water; barns, well and running water; fields have springs and brooks. Nice view of Catskill Mountains 15 miles distant, Crystal and Myosotis lakes, 2½ and 3½ miles distant. Occupied by owner. Reason for selling, wishes to engage in other business. Price, \$3,000. Terms, cash or half cash, balance on mortgage at 5%. This is nice land to work, in good state of cultivation. Buildings are all in good condition and handy. Good home markets for all produce. The timber on this farm will bring enough to pay for it. There is a 20-acre field plowed for oats. Good sale for lumber and wood. Address Wm. H. Miller, Medusa, N. Y.

No. 18—Farm of 300 acres, located 3 miles from Preston Hollow P. O.; 12 miles from railway station at Middleburg, on line of Schoharie & Middleburg R. R.; ½ mile from school; 3 miles from churches, butter factory and milk station. Highways, somewhat hilly. Surface, part rolling, part level. Soil, loam. Acres tillable, 250. Acres in timber, 30, hemlock. 75 fruit trees. Best adapted to oats, barley and buckwheat. Fences, wire and stone, good. House, in good condition. Two barns, in good condition. Watered by springs. Farm is 2 miles from Crystal Lake. Occupied by tenant. Farm has kept 25 head of cattle, 50 sheep and 5 horses. Reason for selling, owner has too much land. Price, \$3,000. Terms easy. Address W. B. Smith, Preston Hollow, N. Y. Owner will rent.

No. 19—Farm of 147 acres, located 2 miles from Preston Hollow P. O., 15 miles from railway station at Middle-

burg, on line of D. & H. R. R., 1 mile from school, 2 miles from churches and milk station. Highways hilly but in good condition. Surface of farm rolling. Altitude about 1,500 ft. Soil, sand and gravelly loam. Best adapted to grain and dairying. Fences, stone, fair condition. House, 9 rooms. Barns and outbuildings in fair condition. Watered by never failing spring. Occupied by owner. Reason for selling, owner has other business. Price, \$1,200. Terms easy. Address Wm. Benjamin, Rensselaerville, N. Y.

TOWN OF WESTERLO

Population 1,307

No. 20—Farm of 230 acres, located 1 mile from Dormansville P. O., R. D. 1; 12 miles from railway station at Ravena, on line of W. S. R. R.; 1 mile from school and churches; 3 miles from butter factory. Highways, good. Nearest city, Albany, population about 100,000, 17 miles, reached by highway. Surface of farm, rolling. Soil, gravel, loam. Acres in meadow, 40; in natural pasture, 30; in timber, 20, second growth hemlock, beech, maple, etc. Acres tillable, 150. Fruit, 25 acres of orchard, all kinds of apples, fine fruit farm. Best adapted to corn, oats, rye, buckwheat, etc. Fences, stone, fair condition. 3 houses on this place, main house, large and in good condition. Outbuildings ample for size of farm, some in good and others in poor condition. Watered, house, by well and cistern; barns, by well; fields, by springs and creeks. This farm is 4 miles from Helderberg Mountains. Occupied by tenant. Reason for selling, to close an estate. Price, \$6,000. Terms 1/3 cash. Address P. J. Winegard, Endicott, N. Y.

No. 21—Farm of 185 acres, located 2 miles from So. Westerlo, R. D. 1 from Dormansville, 14 miles from railway station at Ravena, on line of W. S. Railway; 1 mile from school and Protestant church, 2 miles from butter factory. Highways somewhat hilly but good. Nearest city, Albany, 25 miles distant, reached by highway or rail from Ravena. Surface of farm nearly level, southern exposure. Altitude about 1,500 ft. Soil, clay sub-soil. Acres in meadow, 100, in natural pasture 60, in timber 25, variety, mostly hemlock. All tillable except woodland. Fruit, apples, pears, grapes, plums, etc. Best adapted to hay,

oats, buckwheat and corn. Fences, stone and wire, fair condition. Large house in good condition. Outbuildings, good size barns, new chicken house with well fenced yards. Watered, house and barn by running water, fields by springs. Occupied by tenant. Reason for selling, owner a widow and cannot attend to farm. This is a fine dairy farm. Price \$4,000. Terms, part cash, remainder on mortgage. Address Emily R. Wickes, So. Westerlo, N. Y. Owner will rent for money rent, on shares or with option to buy.

No. 22—Farm of 90 acres, located 1 mile from South Westerlo P. O., 14 miles from railway station at Ravena, on line of W. S. Ry., 1 mile from school, church and butter factory. Highways in good condition. Surface of farm rolling. Altitude 800 ft. Soil, good. Acres in meadow, 65; in natural pasture, 10; in timber, 7; hard and soft. Acres tillable, 70. Fruit, peaches, pears, cherries and apples. Best adapted to hay and grain. Fences, stone wall and wire, fair condition. House, 100 ft. long, first-class condition. Outbuildings, barn 40x60, wagon house and hog house, shed and hen house. Watered, house by well and cistern, barns by springs, fields by never-failing stream. Unoccupied. Reason for selling, to close an estate. Price \$2,200. Terms, cash or part down, remainder on mortgage. Address, Vernon Whitford, Westerlo, N. Y., Box 72.

No. 23—Farm of 15 acres, located 4 miles from Greenville P. O., R. D. 1; 18 miles from railway station at Coxsackie, on line of W. S. Railway, 50 rods from school and Methodist church, 4 miles from eight churches. Highways in good condition. Nearest city and large village, Albany and Catskill, 25 miles distant. Surface of farm rolling, rather rough. Soil fairly good. 10 acres tillable. All in pasture land at present. Fruit, 8 apple trees and 3 cherry trees, also grapes. Fences, stone and wire. House, 26x22, good condition. Outbuildings, barn, good condition. Watered, house and barn by well, fields by spring and creek. This farm is about 6 miles from Catskill Mountains. Unoccupied. This farm has been used for summer home. There is another house on place which could be occupied. Price, \$1,100. Terms, cash or time on payment of amount sufficient to secure against loss. Address Abbie E. Hale, Greenville, Greene county, N. Y. Owner will rent.

ALLEGANY COUNTY

Area, 1,047 square miles. Population, 41,412. Annual precipitation, 42.4 inches. Annual mean temperature, 47.5°. Number of farms, 4,937. Average value of farm lands per acre, \$37.32. County seat, Belmont.

Located in what is known as the southern tier of counties west of the center of the state.

The surface features are rough and mountainous. The county is traversed by deep valleys the sides of which are, in many places, too steep for cultivation. Some of the elevations are from 500 to 800 feet above the valleys and from 2,000 to 2,500 above tide water. The Genesee river flows northeast and a little to the west of the center of the county, and many of the tributaries of this river have cut deep valleys in different directions.

The soil of the county is known as the volusia soil. These soils are derived through feeble glaciation and consist of a gray, light brown or pale yellow silt loam. The volusia loam is the most important agricultural soil of the volusia series. The soil upon the upland is generally a heavy clay. This soil is excellently adapted for grazing, and wherever found dairying can be profitably engaged in. It is good soil for grains and general farming. Notwithstanding the roughness of the surface features, Allegany county contains many excellent farms and farm lands.

The lines of communication necessarily follow the valleys and pass in crooked lines throughout the county. There are more than fifteen hundred miles of graded and improved highways. There are many villages in the county but no large cities. The excellent school advantages are shown by the 245 district schools and Alfred University. This university, located at Alfred, offers a four-year course in agriculture.

Some of the leading crops of the county are as follows: Corn, 94,126 bushels; oats, 935,955 bushels; wheat, 28,147 bushels; barley, 39,000 bushels; buckwheat, 170,620 bushels; rye, 6,385 bushels; potatoes, 1,631,123 bushels; hay and forage, 175,279 tons. The county ranks fifth in the production of potatoes and fourth in the number of farms. There are twenty-two agricultural societies for the purpose of promoting agricultural interests and improvement of rural life.

The dairy interest is shown in the 39,573 milch cows found on the farms of the county. The other live-stock being horses, 13,542; swine, 14,062; sheep, 24,320; poultry, 187,579. The total value of all farm property is \$26,071,862, a small increase over that of 1900, namely, \$1.21 per acre.

TOWN OF ALFRED

Population 1,590

No. 24 — Farm of 13 acres, located $\frac{1}{4}$ mile from Alfred P. O., $2\frac{1}{4}$ miles from Alfred Station, on line of Erie Ry., $\frac{1}{4}$ mile from school and churches; $1\frac{1}{2}$ miles from cheese factory; $2\frac{1}{4}$ miles from milk station. Highways, good. Altitude about 2,000 feet. Soil, some gravel, some hard pan. Acres in meadow, 2; in natural pasture, 3. Acres tillable, 8. Fruit, 50 apples trees, also a few pear and plum trees. Best adapted to fruit and general crops. Fences, wire, good condition. House, 14 rooms, good condition. Outbuildings, basement barn, 30x40, good condition. Watered, house by spring, barn and fields by creek. Occupied by tenant. Reason for selling, owner is widow and cannot look after property. Alfred University and State Agricultural School are located in the Village of Alfred, giving unusual educational advan-

tages. Price, \$3,000. Terms, \$1,000 cash, balance on mortgage. Address Elma Coates, 56 Jane Street, Hornell, N. Y.

TOWN OF ALLEN

Population 598

No. 25 — Farm of 206 acres, located 7 miles from railway station at Angelica, on line of Erie & Shawmut R. R.; $\frac{1}{2}$ mile from school and Lutheran church; 3 miles from Methodist Episcopal church; 1 mile from cheese factory. Highways, good. Nearest large village, Angelica, 7 miles distant. Surface, part hilly, part level. Acres in meadow, 100; in natural pasture, 50; in timber, 50, maple and basswood. Acres tillable, 100. 1 orchard. Best adapted to oats, spring wheat, buckwheat and corn. Fences, wire and rail. House, 8 rooms; 4 large barns, granary, hogpen and shop. Watered, house, by well; fields by springs. Occupied by tenant. Reason for selling, death of

owner. Price, \$25 per acre. Terms, payment down. A good dairy farm. Address Mrs. W. R. Piatt, Silver Springs, Wyoming Co., N. Y.

TOWN OF BELFAST

Population 1,773

No. 26 — Farm of 200 acres, located $2\frac{1}{2}$ miles from Belfast P. O., R. F. D. 1, from Belvidere; $1\frac{1}{2}$ miles from railway station at Transit Bridge, on line of Buffalo & Susquehanna R. R.; $1\frac{1}{2}$ miles from school; $2\frac{1}{2}$ miles from Protestant and Catholic Churches; $1\frac{1}{2}$ miles from one cheese factory; 2 miles from another cheese factory; $1\frac{1}{2}$ miles from milk station; 1 mile from milk condensing plant. Highways, good country roads. Nearest large village, Belfast, $2\frac{1}{2}$ miles distant; population about 1,000, reached by highway. About 100 acres Genesee River flats, a deep rich loam. Acres in meadow, 100; in natural pasture, 60. Acres tillable, 95. Fruit, a good apple orchard of about 4 acres. The flats are best adapted to grain, hay, alfalfa, potatoes, onions and celery, hill land suitable for buckwheat, rye, hay and pasture. Fences, stump and wire; fair condition. House, 12 rooms; good condition. Outbuildings, horse barn, 36x36; needs new shingles; barn, 34x52 with lean-to 14x34; basement with cement floor room for 26 cows, fair condition; barn, 32x40, poor condition; granary, hen house and corn crib. Watered, house by wells, barns by running water, fields by river and springs. Genesee river runs along east side of farm and White Creek within 20 rods of west side of farm. Occupied by tenant. Reason for selling, owner has other business. Price, \$8,000. Terms, \$5,000 cash, balance on mortgage. Address Wm. Brown, Belfast, N. Y.

TOWN OF CANEADEA

Population 1,354

No. 27 — Farm of 106 acres, $\frac{1}{8}$ mile from railway station, post office and stores. Soil, partly river bottom land and very productive. Watered by springs. Cheese factory $\frac{1}{8}$ of a mile distant. Building worth \$2,500, on main road. House, 16x36, two stories, with wing, 12x36, one story in good condition, worth \$1,500. Barns, 30x60; shed, 16x60; carriage house, in good condition. Buildings are all painted, in fine shape. Fine apple orchard. Land, all tillable; good for wheat, corn, potatoes, grass;

well watered. This farm is in the Genesee valley. Price, \$5,500. Terms, \$2,000 cash, balance on time. Address J. E. Munn, Caneadea, N. Y.

TOWN OF GROVE

Population 740

No. 28 — Farm of 250 acres, situated 3 miles from Swain P. O., and railway station on line of Erie R. R. Highways, fair. Acres in meadow, 100; balance tillable; acres natural pasture, 90. 1 mile from cheese factory. Some second growth timber. Fruit, 2 small orchards of apples and pears. Best adapted to hay, barley, oats, potatoes and buckwheat. Occupied. Fences, wire and rail, in good condition. House, 18x28, 2 stories; wing, 18x18, nearly new. Barns, 30x102, and 24x66. This farm would make a good stock farm. Watered, house by well; barns by cistern; fields by springs. Price, \$7,500. Terms, $\frac{1}{4}$ down; balance to suit buyer. Reasons for selling, owner blind and not able to care for the farm. Name and address of owner, Geo. W. Carter, Nunda, Livingston Co., N. Y.

TOWN OF RUSHFORD

Population 1,260

No. 28 $\frac{1}{2}$ — Farm of 64 $\frac{1}{2}$ acres, located 2 miles from Farmersville P. O. and railway station on line of B. R. & P. Ry.; 1 mile from railway station at Fairview, on line of B. & S. Ry. School next to farm. $\frac{1}{2}$ mile from cheese factory; 2 miles from milk station. Highways, in fair condition. Surface of farm, level, no waste land. Acres in timber, 20. Large productive orchard. Best adapted to hay and grain crops. Fences, board and wire, fair condition. House, 10 rooms, good condition. Outbuildings, barn 36x50, with stable attached; horse barn, 26x40; hen house, hog house, granary in barn. Watered by two wells and springs. Occupied by owner. Price, \$25 per acre. Terms, reasonable payment down, remainder on mortgage at 5 per cent. Address A. B. Morgan, Agent, Franklinville, N. Y.

TOWN OF WELLSVILLE

Population 5,663

No. 29 — Farm of 15 $\frac{1}{4}$ acres, located $1\frac{1}{4}$ miles from P. O. at Wellsville, R. D. 2; $1\frac{1}{2}$ miles from railway station at Wellsville, on line of Erie and Buffalo R. R. 50 rods from school; $1\frac{1}{4}$ miles from Protestant and Catholic Churches;

1¼ miles from cheese factory and milk station; 7 miles from milk condensing plant. Surface of farm, level. Altitude, 2,000 feet. Soil, loam with clay sub-soil. Acres tillable, 14. Best adapted to hay, oats, potatoes and garden truck. Fences, wire, fair condition. House, 8 rooms, cellar under whole house, painted, new. Outbuildings, barn, 24x30 with stable 16x24 and shed 14x37 attached; hen house, hog house and ice house; good condition. Watered by never-failing well and creek. Occupied by owner. Reason for selling, owner wants to buy a larger farm. Price, \$2,800. Terms, prefer cash, but would take ½ cash, balance on time at 6 per cent. Address Bert Sherwood, Wellsville, N. Y.

TOWN OF WEST ALMOND

Population 458

No. 30 — Farm of 96 acres, located 9 miles from Almond P. O., R. D. 2; 2½ miles from railway station at Bennett, on line of Shawmut; ½ mile from school; 1½ miles from Protestant Churches; 7 miles from butter factory; 1½ miles from cheese factory; 8 miles from milk station and milk condensing plant. Highways, somewhat hilly, but in good condition. Nearest large village, Angelica, 7 miles distant; population about 1,100, reached by highway. Surface of farm, rolling. Soil, clay sub-soil. Acres in meadow, 50; in natural pasture, 20; in timber, 20; beech and maple. Acres tillable, 76.

Fruit, apples, plums, pears and cherries. Best adapted to hay, grain and potatoes. Fences, wire, in good condition. House, 12 rooms, new. Outbuildings, cow barn, 30x40; horse barn, 24x30. Watered, house by well and cistern, barns and fields by springs. Occupied by owner. Reason for selling, advanced age of owner. Price, \$3,000. Terms, \$1,000 cash. Address James Wyse, Almond, N. Y., R. D. 2. Owner will rent with option to buy.

No. 31 — Farm of 74 acres, located 7 miles from P. O. at Almond, R. D. 1; 7 miles from railway station at Almond, on line of Erie Railway; 1 mile from school; 2 miles from Protestant Churches; 7 miles from butter factory; 2 miles from cheese factory; 7 miles from milk station and milk condensing plant. Highways, some hills, but road in good condition. Surface of farm, rolling. Sub-clay soil. Acres in meadow, 35; in natural pasture, 27; in timber, 12; beech and maple. Acres tillable, 45. Fruit, 16 apple and 4 pear trees. Best adapted to hay, grain and potatoes. Fences, wire, good condition. House, 8 rooms, good condition. Outbuildings, barn, 26x30; barn, 16x20; good condition. Watered by spring. Occupied by owner. Reason for selling, advanced age and ill health of owner. Price, \$1,600. Terms, \$500 down. Address Albert Burdick, Almond, N. Y., R. F. D. 1. Owner will rent with option to buy.

BROOME COUNTY

Area, 609 square miles. Population, 78,809. Annual precipitation, 38.27 inches. Annual mean temperature, 48.6°. Number of farms, 4,017. Average value of farm lands per acre, \$31, an increase of 9.8 per cent. since 1900. County seat, Binghamton.

Located in what is known as the southern tier of counties bordering on the Pennsylvania line.

The surface of the county is diversified with rolling uplands, broad intervalles and narrow valleys. Altitude of the hill ranges vary from 300 to 600 feet above the valley and 1,200 to 1,500 above tide water. Generally these hills are rounded and arable. Along the rivers, namely: Susquehanna, Chemung and Tioughnioga, the soil is exceptionally fertile, while the higher and hilly portions afford fine grazing and are well adapted for dairying, stock raising, fruit, especially apples, which are raised with great success wherever orchards are properly cared for. The value of all farm property is \$16,638,994. The total number of cattle is, dairy cows, 45,620; horses, 8,762; sheep, 9,600; poultry, 184,377. The production of principal crops was corn, 85,215 bushels; oats, 278,170 bushels; buckwheat, 154,982 bushels; potatoes, 708,114 bushels; hay and forage, 113,789 tons. Butter, wool and meat are well represented in the line of products. The production of milk was 16,069,529 gallons. Total receipts from the sale of dairy products, \$1,561,745. The lines of communication through this county afford excellent transportation facilities at low rates for ample market. There are no large tracts of timber, but most farms are well supplied with wood. Ponds, wells, springs and streams give abundant

supply of excellent water. There are 207 district schools, a Pomona grange and ten subordinate granges, a cow testing association, poultry association, county agricultural societies, county fire relief association, which with the Binghamton Industrial Exposition, furnish educational advantages above the ordinary. There are 48 milk stations and factories in this county.

Transportation facilities are afforded by the Delaware, Lackawanna & Western, the Erie and the Delaware & Hudson railways, which traverse the county.

TOWN OF BINGHAMTON

Population 675

*No. 32 — Farm of 55 acres, located 8 miles from railway station at Binghamton on line of three railways; 1 mile from school, Catholic and Protestant Churches; $1\frac{1}{2}$ miles from butter factory; 6 miles from cheese factory; 8 miles from milk condensing plant. Nearest city, Binghamton, 6 miles distant, reached by highway. Highways good. Surface of farm rolling. Altitude, 900 feet. Soil, clay loam. Acres in meadow, 20; in natural pasture, 10; in timber, 10; maple, beech, chestnut. Acres tillable, 25. Fruit, 80 bearing apple trees. Best adapted to oats, hay, buckwheat, corn, rye and potatoes. Fences, wire, pole and rail. House, 6 rooms, fair condition. Outbuildings, 2 connecting barns, one has basement, good condition; also chicken house. Watered by spring and brook. Quaker Lake summer resort located $1\frac{1}{2}$ miles from farm, also two other small lakes. Occupied by owner. Reason for selling, owner has other business. Price, \$1,500. Terms, $\frac{1}{2}$ cash, balance on time. Address Volney K. Soule, agent, Exchange Bldg., Binghamton, N. Y.

TOWN OF COLESVILLE

Population 2,415

No. 33 — Farm of 170 acres, 1 mile from P. O., R. D. 1; 3 miles from railway station at Center Village, on line of Nineveh branch of D. & H.; 1 mile from school, saw mill, grocery and railroad switch for loading lumber; 1 mile from Methodist Episcopal church; 3 miles from butter factory; 5 miles from milk station. Nature of highways, hilly but good. Surface features, rolling and level. Soil, good. Acres in meadow, 50; natural pasture, 60; in timber, 60, all kinds, second growth. Fruit, plenty of apples and cherries. Best adapted to potatoes, oats, buckwheat and corn. Fences, wire and rail, in good condition. House 7 rooms in fair condition. Barn, 28x36, with good basement, in fair condition. Watered, house, by spring; barn, by spring; fields, by springs and creek.

Susquehanna River 1 mile distant. Occupied by owner. Good maple orchard of 80 trees near house. About \$1,000 worth of timber. Reason for selling, owner's health not good; also has other lands. Price, \$2,500. Terms, cash or half cash. Address D. L. Throop, Nineveh, N. Y.

No. 34 — Farm of 100 acres, $\frac{1}{4}$ mile from Belden P. O. and railway station, on line of D. & H. R. R.; 2 miles from Tunnel station; 2 miles from school and churches; $1\frac{1}{2}$ miles from cheese factory; 2 miles from milk station and condensing plant. Nature of highways, hilly to Tunnel, 2 miles; level and good to Harpersville, 4 miles; nearest city, Binghamton, population 48,443, distant, 16 miles by highway and 20 by railway. General features of farm, nearly level. Can see it all from dooryard. Nature and quality of soil, clay loam, new, never has been plowed very much. Acres in meadow, 40; natural pasture, 55 (white clover); timber, 6, pine and hemlock, thrifty. Acres tillable, 100. Fruit, 25 apple trees, mostly Northern Spies. Best adapted to grain, hay, potatoes, corn, etc. Fences, wire, in good condition. House, 6 rooms, and woodshed, in good condition. Barns: 30x36, with basement, new; 28x36, with winter stables, 14x36, recently repaired. Hogpen and henhouse, 16x20; milkhouse. Watered, house by well, barns and fields, by creek and spring. Susquehanna River 4 miles distant. The property is not occupied at present, but is operated by the owner. Can give immediate possession if sold before April 1. The buildings would cost what is asked for the farm. The farm will support 30 head in summer and 15 head and team in winter. The meadows need cultivating and reseeding; land has not been plowed in a long time. Reasons for selling, old age and scarcity of help. Price, \$2,000. Terms, $\frac{1}{2}$ cash, plenty of time on balance. Address G. S. Hurd, Harpersville, N. Y., R. D. 2.

No. 35 — Farm of 247 acres, 1 mile from Harpersville P. O., R. D. 2; 2 miles from station on D. & H. R. R.; 20

*Farm is in hands of agent or real estate dealer.

rods from school; 3 miles from Presbyterian church; 1 mile from the Episcopal, Baptist and Methodist; 2 miles from butter factory and condensing plant. Nature of highways, slightly hilly, but good. Nearest city, Binghamton, population 48,443, 16 miles distant by rail or highway. General surface features, rolling. Meadows, large and smooth. Nature of soil, mellow and productive. Acres in meadow, 100; pasture, 90; timber, 60, thrifty chestnut, oak, beech, birch, maple, pine and hemlock; acres tillable 150. Fruit, grapes, plums, 3 apple orchards. Best adapted to potatoes, corn, grain, hay, general dairying and farming. Fences, rail, wire, all in good condition. New house, 30x32, and wing, 12x24, 12 rooms; also an old house ceiled with old hill pine. Barns and outbuildings: barn, 50x72, basement under all, $\frac{1}{2}$ concrete floor; horse and wagon barn, 24x50; barn, 24x36; milk and icehouse, 24x30; building, 20x36; hogpens with concrete floor in basement, henhouse and toolhouse on next floor and granary on third floor. Watered, house, by fine well; barns, running water; fields, large, living springs. Susquehanna River in sight, 1 mile distant. Beautiful view of 10 miles to the south, east and northeast. Occupied by owner. Good stone quarry on place. This farm cuts on an average of 75 tons of hay. Will winter 40 head of cattle and the teams; will summer 30 head. Possession in 60 days. Reasons for selling, old age of owner and lack of help. Price, \$6,500. Terms, \$2,000 cash, time on balance. Address G. S. Hurd, Harpersville, N. Y., R. D. 2.

No. 36 — Farm of 181 acres, located $3\frac{1}{2}$ miles from Harpersville P. O., R. D. 2; $3\frac{1}{2}$ miles from railway station at Harpersville, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{2}$ miles from Methodist church; $3\frac{1}{2}$ miles from butter factory; $3\frac{1}{2}$ miles from condensing plant. Highway, some hills but generally good. Nearest city, Binghamton, population 48,443, 12 miles distant, reached by rail or highway. Surface of farm, mostly level. Soil mostly red loam. Acres in meadow, 56; in natural pasture, 60; in timber, 30, chestnut, pine, red and white oak, birch and maple. Acres tillable, 151. Fruit, 50 apple trees, 3 pear, 6 plum, 4 cherry trees, large grape-vine. Adapted to all crops grown in this climate. Fences, wire and rail, in good condition. House, 12 rooms, water in house, in fine condi-

tion. Cow and hay barn; horse and carriage house; large new milkhouse; hog, hen and large woodhouse; icehouse; large granary; smokehouse. Watered, house by spring and well; barns by spring; water piped to milkhouse; fields, by springs. 6 miles from Chenango River, 3 miles from Susquehanna River, 10 miles from Afton Lake. Would sell stock and tools with the place. Farm will keep 25 cows. Have lumber sawed for 16x24 silo. Expect to put it up next spring. Occupied by owner. Reason for selling, owner wishes to go west. Price, \$4,500. Terms, cash, or \$3,000 cash, balance on time. Address Cafferty Bros., Harpersville, N. Y., R. D. 2.

No. 37 — Farm of 33 acres, located $\frac{1}{4}$ mile from Harpersville P. O.; $\frac{1}{2}$ mile from railway station at Harpersville, on line of D. & H. R. R.; $\frac{1}{8}$ mile from school; $\frac{1}{8}$ mile from Methodist, Baptist and Episcopal churches; $\frac{1}{2}$ mile from milk station. Highways, good, State road. Nearest large city, Binghamton, population 48,443, distant 20 miles reached by railway or highway. Surface of farm, level. Soil, gravel loam. Acres in meadow, 15; in natural pasture, 18. The entire farm is tillable. Fruit, pears, apples and plums. Best adapted to corn, oats, rye and potatoes. Fences, wire, good condition. House 10 rooms, good condition, painted. 2 barns, 34x48 and 30x40, painted, in good condition; 2 henhouses. There are about 50 maple trees around buildings. Watered, house, by artesian well; barns, by well and spring; fields by river and springs. Susquehanna River forms southern boundary of farm. Nice place for city boarders, plenty of maple shade. Four ton platform scales on the place, the only set in the village. Occupied by owner. Reason for selling, change of location. Price, \$4,000. Terms, \$1,500 down, balance to suit purchaser. Address James Whitlock, Harpersville, Broome Co., N. Y.

No. 38 — Farm of 60 acres, located 3 miles from Harpersville P. O., R. D. 2; 2 miles from railway station at Belden, on line of D. & H. Railway; $\frac{1}{8}$ mile from school; $1\frac{1}{2}$ miles from Methodist church; 3 miles from butter factory and milk station; 4 miles from milk condensing plant. Highways good. Nearest city, Binghamton, 12 miles distant, reached by rail. Altitude about 500 feet. Surface of farm, rolling. Soil, clay loam. Acres in meadow, 20; in natural pasture, 20. Sugar bush of about 150 trees.

All tillable except woodland. Fruit, about 25 apple trees. Best adapted to corn, oats and potatoes. Fence, wire and rail, good condition. House, 8 rooms, summer kitchen and woodshed attached. Outbuildings, barn, 20x36, cow shed attached; horse barn and wagon house. Watered, house by well, barns by spring, fields by trout brook. Occupied by owner. Reason for selling, advanced age of owner. Price, \$2,500. Terms, \$1,200 cash, remainder on mortgage. Address W. R. Stage, Harpersville, N. Y., R. D. 2.

TOWN OF CONKLIN

Population 850

*No. 39—Farm of 400 acres, located 3 miles from Conklin P. O. and railway station, on line of D., L. & W. R. R.; $\frac{3}{4}$ mile from church; 2 miles from Baptist church, and 3 miles from Methodist church; 4 miles from cheese factory; 3 miles from milk station. Nearest city, Binghamton, population 48,443, 10 miles distant. Surface, rolling. Soil, clay loam. Acres in meadow, 100; in natural pasture, 100; wood, 100. Fruit about 50 apple trees. Best adapted to oats, hay, buckwheat, rye, corn and potatoes. Fences, rail, fair. House, 8 rooms, good condition. 2 sets of barn buildings. Watered by well, springs and brook. This property is 3 miles from Susquehanna River, and 1 mile from Snake Creek. Occupied by tenant. Reason for selling, to close an estate. Good dairy farm. Price, \$3,500. Terms, \$1,500 or more cash, balance to suit purchaser. Address Volney K. Soule, Binghamton, N. Y.

TOWN OF KIRKWOOD

Population 852

No. 40—Two adjoining farms of 103 acres each, post office at Binghamton, R. D.; 2 miles from railway station at Binghamton, on line of D. & H., Erie and D., L. & W. R. R.; $\frac{3}{4}$ mile from school; $\frac{1}{2}$ mile from church. Highways, good. Nearest large town, Binghamton, population 48,443. Farm adjoins city limits and is $\frac{3}{4}$ mile from electric street cars. Surface, rolling and level. Soil, clay loam. Acres in meadow, 40, in each place; in natural pasture, 40, in each place; in timber 20, in each place, chestnut, hickory, oak and hard wood. Fruit, apples, pears, plums and cherries. Adapted to dairying, fruit, grain, vegetables and poultry. Fences, wire, fair condition. House on each farm in good condition. Barns on both farms in fair

condition. Watered by running water, wells, springs and brook. These farms are $\frac{1}{4}$ mile from Susquehanna River. Occupied by tenants. Reason for selling, to close an estate. Price \$4,500 for one and \$3,500 for the other. Terms $\frac{1}{3}$ down, balance on bond and mortgage. Owners will trade for Albany property, or rent for cash. Address J. S. Waterman, Worcester, N. Y., or W. D. Ives, 19 Manning Boulevard, Albany, N. Y.

No. 41—Farm of 35 acres, located 7 miles from Windsor P. O., R. D. 2; 5 miles from railway station at Binghamton, on line of Erie, D. & H., and D., L. & W.; 1 mile from school and churches; 1 mile from cheese factory. Nature of highways, State road, level. Nearest city, Binghamton, population 48,443, 5 miles distant, reached by State road. Surface, rolling, sloping to the south. Soil, loam, very productive. Acres in meadow, 20; in natural pasture, 3; in timber, 2, oak, chestnut, pine and hemlock; acres tillable, 30; 25 apple trees, 2 pear trees, 3 plum trees, 6 cherry trees, grapes, strawberries, red raspberries, black raspberries, blackberries and asparagus. Best adapted to berries, poultry and general farming. Fences, rail and wire, fair condition. House, 7 rooms, woodhouse attached, in good condition. Barn, 30x36, with stable attached, for 2 horses and 4 cows; 2 henhouses, for 100 hens. Watered, house and barn by well; fields by springs and stream. Susquehanna River 2 miles distant. Occupied by owner. An ideal poultry and berry farm or country home. House, 160 feet from road, among large maple and evergreen trees. Reason for selling, poor health of owner. Price, \$2,400. Terms, \$1,600 cash. Address E. C. Almy, 214 W. Kennedy street, Syracuse, N. Y. Owner will rent for cash or with option to buy.

*No. 42—Farm of 70 acres, located 4 miles from railway station at Langdon, on line of Erie railway, R. F. D. route passes farm; 1 mile from school and 2 Protestant churches, 3 miles from Catholic church, $1\frac{1}{4}$ miles from cheese factory, 4 miles from milk station, 6 miles from milk condensing plant. Highways, macadamized. Nearest city, Binghamton, population 48,443, 5 miles distant, reached by highway. Altitude, 800 ft. Soil, clay loam. Acres in meadow, 20; in natural pasture, 20; in timber, 6; hemlock, maple and chestnut. Acres tillable, 24. Fruit, apples, pears and cherries, 1 acre of grapes. Best

*Farm is in hands of agent or real estate dealer.

adapted to oats, hay, corn, buckwheat and alfalfa. Fences, wire, board and rail. House, 8 rooms, 2 stories, good condition. Outbuildings, basement barn, shed, hay barn, 2 chicken houses, all in good order. Watered, house by well, barn by running water, fields by spring and creek. Park Creek runs through farm. Occupied by relative of owner. Reason for selling, advanced age of owner. This is a valley farm, stage line, 2 phones, fine shade, near neighbors. Price, \$3,000. Terms, \$700 or more cash, balance on easy terms. Address Volney K. Soule, agent, Exchange Bldg., Binghamton, N. Y.

*No. 43—Farm of 60 acres, located 1 mile from Binghamton P. O., 2 miles from railway station at Binghamton, on line of D. & H., Erie, Del. & Lackawanna railways; 1 mile from school and churches. Highways, dirt turnpike. Surface of farm, smooth, southern exposure, Altitude, about 900 ft. Soil, clay loam. Acres in meadow, 25; in natural pasture, 15. Acres tillable, 20. Fruit, 25 apple trees. Best adapted to oats, hay, potatoes, corn, rye, buckwheat and berries. Fences, wire and rail. House, 9 rooms, 1½ stories, good condition. Outbuildings, 1 large barn, gambrel roof, basement, shed attached, hog house and 2 chicken houses, good condition. Watered, house and barn by well, fields by springs. This farm is one mile from Susquehanna and Chenango rivers. Occupied by owner. This farm will be sold with or without stock and tools. Price, \$2,500. Terms, one-half cash, balance to suit purchaser. Address Volney K. Soule, agent, Exchange Bldg., Binghamton, N. Y.

TOWN OF LISLE

Population 1,429

No. 44—Farm of 243 acres, 1 mile from Lisle, on line of D., L. & W. R. R. Nature and quality of soil, gravel and hardpan; excellent meadow land. Acres in meadow, 125; acres in pasture, 120. Very little timber. House, upright and wing, of medium size and in fair condition. Barns, 1 large stock barn; 1 good-sized horse barn, granary, hoghouse and hay barn, 26x32. Large barn and house, recently painted. Fences, rail and wire in fair condition. Watered by running water. The above

farm is said to be valuable on account of its fine meadows and pastures and favorable locality. Price, \$7,500. Terms, reasonable payment on purchase and liberal terms on remainder. Address Ira D. Carley, Lisle, N. Y.

TOWN OF MAINE

Population 1,363

No. 45—Farm of 120 acres, 5 miles from railway station at Union, 1¼ miles from Union Center, R. D. Soil, clay loam. Acres in meadow, 75; 10 acres in woodland. This is a good dairy or grain farm. Nicely located, 1¼ miles from creamery. House, 28x36, with wing, 24x30, in fair repair. Several large barns and outbuildings, all good. Plenty of good water. Well fenced. Telephone. This farm is on a macadam road which extends to Binghamton, 13 miles distant, and to Maine Village, 1¾ miles distant. Price, \$5,000. Terms, \$1,000 down, balance on time. Address A. E. Whittemore, Union, N. Y., R. D. 2. Owner will rent for cash.

No. 46—Farm of 215 acres, located 6½ miles from P. O., R. D. 2 from Lestershire, 6½ miles from railway station at Union, on line of Erie, and D., L. & W. railways, 1 mile from school and church, 2½ miles from butter factory, 6½ miles from milk condensing plant. Highways, part macadamized, part dirt. Nearest city, Binghamton, 9 miles distant, population 48,443, reached by rail and highway. Surface of farm smooth, sloping to south. Soil, black loam. Acres in meadow, 75; in natural pasture, 40; in timber, 15; chestnut, oak and basswood. Acres tillable, 180. Fruit, plums, cherries, pears and apples. Best adapted to all kinds of grain and potatoes. Fences, wire and rail, good condition. House, No. 1, 9 rooms, nearly new; house No. 2, 9 rooms, good. Outbuildings, barn, 30x40, cow barn, 30x44, horse barn, 30x30, good condition, basement barn, 30x40, new. Watered, house by well, barns by spring, fields by spring and brook. Occupied by owner. Telephone in house. Reason for selling, poor health of owner. Price, \$7,000. Terms, one-half down, balance on bond and mortgage at 5% interest. Address Fernando W. Layman, Lestershire, N. Y., R. D. 2.

*Farm is in hands of agent or real estate dealer.

TOWN OF NANTICOKE

Population 536

No. 47—Farm of 135 acres, located 1 mile from Ketchumville P. O., 7 miles from railway station at Newark Valley, on line of L. V. R. R.; 1 mile from school and churches; 1½ miles from butter and cheese factories; 7 miles from milk station and condensing plant. Nature of highways, fair. Nearest village, Newark Valley, population 925, 7 miles distant, reached by highway. Surface, rolling. Soil, rich and fertile. Acres in meadow, 70; in natural pasture, 35; in timber, 30, second growth hard wood; acres tillable, 70. Cherry, pear and apple trees, some small fruits. Fences, barbed wire, mostly in good condition. House, 42x24, 2 stories, with wing, somewhat run down. Barn, 36x40; granary, 12x14. Occupied by tenant. Reason for selling, poor health of owner. Price, \$2,500. Terms, agreeable to buyer. Will rent for \$150 per year. Address Charles Parsons, Newark Valley, Broome Co., N. Y.

TOWN OF SANFORD

Population 2,980

No. 48—Farm of 260 acres, located 4½ miles from Deposit P. O., and railway station, on line of Erie railway, 1½ miles from school, 4½ miles from Protestant and Catholic churches, 2 miles from butter factory, 4½ miles from milk station and milk condensing plant. Highways somewhat hilly but good. Nearest city, Binghamton, population 48,443, 40 miles distant, reached by railway. Surface of farm rolling and hilly. Altitude, 1,500 ft. Soil, good, hard pan sub-soil. Acres in meadow, 160; in natural pasture, 90; in timber, 110, maple, beech and hemlock. Acres tillable, 125. Fruit, 100 apple, 15 pear, 30 plum and 12 cherry trees. Best adapted to oats, rye, corn, buckwheat and potatoes. Fences, stone wall, wire and rail. House, 26x82, double, good condition. Outbuildings, 3 barns 30x40, fair condition, hog house, 20x24, ice house, hen house, shop with machinery, gasoline power. Watered by never failing springs. Occupied by owner. Reason for selling, advanced age of owner. Price, \$6,000. Terms, \$2,500 cash, remainder on time. Address G. C. Valentine, Deposit, N. Y.

TOWN OF TRIANGLE

Population 1,600

No. 49—Farm of 126 acres, 6 miles from Whitney's Point, Chenango Forks, R. D. 120 acres meadow and pasture and 6 acres timber. 10-room house in good condition. Occupied by tenant. Barn, 32x65, with basement, nearly new. Horse barn, 26x36, and other outbuildings. Watered by running water and living springs, piped to house and barn. Fences in good condition. Price, \$2,500. Terms, part cash, balance on time. C. E. Adams, owner, Triangle, N. Y.

No. 50—Farm of 300 acres, 1½ miles from Upper Lisle, and 3½ miles from Whitney's Point railway station, on line of D., L. & W., Syracuse & Binghamton Division on line of R. D. Nearest large city, Binghamton, with 48,443 inhabitants. Nature and condition of highways, good, state road. Nature and quality of soil, river flat, loam; uplands, gravel and clay loam. Acres in meadow, 100; acres tillable, 150; natural pasture, 50; acres timber, about 50, 500 to 700 hard maple. Fruit, fine orchard of 75 apple trees and a few pear trees. Adapted to dairying, grain, potatoes, etc. Altitude, about 1,000 feet. Fences, wire and rail, in fair condition. House, upright, 30x40, wing, 20x30, fair condition. Barns, cow barn, new, 35x70; hay barn, 30x40, fair condition. Watered, house, by well and cistern; barn, permanent spring; fields, spring, river and creek. Otselic River forms western boundary of farm. This farm will keep 50 cows and contains about 100 acres of river flat. Good fishing and hunting. Reason for selling, to settle estate. Price, \$40 per acre. Terms, part cash, balance on time. The owner will rent on shares or cash rent. Address F. M. Ames, Whitney's Point, N. Y.

TOWN OF VESTAL

Population 1,618

No. 51—Farm of 135 acres, situated 5 miles from Binghamton and ½ mile from Willow Point P. O. and railway station, on line of D., L. & W. R. R.; 5 miles from churches of every denomination. Four trains daily on the D., L. & W., two eastbound and two westbound, stop at Willow Point, within about ½ mile from the farm. Highways, good. Occupied. Mostly loam soil, rolling. Acres in meadow, 25; natural pasture, 40; timber, 30, chestnut, pine and hard

wood. Acres tillable, 80. Fruit, apples, pears and small fruit sufficient for use of family. Soil best adapted to grass, tobacco and corn. Fences, post, board and stump, in fair condition. House, 26x36, 2 stories and high attic, modern and arranged for bathroom, furnace and with other accommodations; telephone. Large barns and tobacco shed. The house and barns are supplied with an abundance of the purest spring water by pipes from the hill more than $\frac{1}{2}$ mile distant, with a hydrant attachment in each field for watering stock, furnishing sufficient force for sprinkling. Farm about $\frac{1}{2}$ mile from Susquehanna River. Reason for selling, illness in family prevents owner's living there. Price, \$7,000. Terms, 25% down, balance on mortgage at 5%. Owner will rent for cash or with option to buy. Address Wm. F. Van Cleve, Binghamton, N. Y.

TOWN OF WINDSOR

Population 2,495

*No. 52—Farm of 112 acres, located 2 miles from Windsor P. O., $1\frac{1}{2}$ miles

from railway station at East Windsor, on line of D. & H. Railway, $\frac{3}{4}$ mile from school, $1\frac{1}{2}$ miles from Protestant churches, $3\frac{1}{2}$ miles from butter factory, 2 miles from cheese factory, $1\frac{1}{2}$ miles from milk station, 5 miles from milk condensing plant. Highways, macadamized and dirt. Surface of farm mostly table land. Altitude, about 850 ft. Soil, clay loam. Acres in meadow, 30; in natural pasture, 20; in timber, 10; good size for firewood and fences. Acres tillable, 40. Small apple orchard. Best adapted to oats, hay, corn, potatoes, buckwheat, etc. Fences, wire, rail and pole. House, 6 rooms, fair condition. Outbuildings, 1 good size combination corn and hog house, chicken house and granary, fair condition. Watered by springs. Occupied by owner. Reason for selling, owner has another farm and cannot attend to both. Price, \$1,400. Terms, one-half cash, balance on easy terms. This farm will keep twelve cows. Address Volney K. Soule, agent, Binghamton, N. Y.

CATTARAUGUS COUNTY

Area, 1,250 square miles. Population, 65,919. Annual precipitation, 47.71 inches. Annual mean temperature, 47.4° . Number of farms, 6,017. Average value of farm lands per acre, \$34.94, an increase of 32.4 per cent. since 1900. County seat, Little Valley.

Located near the southwest corner of the state with its entire southern boundary on Pennsylvania.

The surface is a hilly, rolling upland, separated by deep valleys into distinct ridges having a north and south direction. Nearly the whole country is broken, but most of the hills are arable to their summit. In some instances they are too steep for proper cultivation but afford excellent pasturage. Toward the northern part the hilly or mountainous features are considerably modified. An unusual number of streams thread the county, the Allegany river and Cattaraugus creek being the principal ones. Most of these streams afford water power and could be made of great value for the use of the farmers. Good building stone is found in large quantities. The soil is rich and productive, highly adapted to hay and forage, dairying and general farming. There are excellent railroad facilities over which the products of the farm can reach ample markets, the city of Buffalo being but a very short distance to the northwest. There are forty miles of state road and 1,576 miles of improved highway.

The principal products of the county are as follows: corn, 175,962 bushels; oats, 803,741 bushels; barley, 16,799 bushels; buckwheat, 209,281 bushels; potatoes, 879,253 bushels; hay and forage, 237,093 tons; maple sugar, 493,694 pounds. Fruit is successfully grown, the county standing number twelve in the production of apples and fifteen in the production of grapes. There were 5,556 farms reporting domestic animals as follows: milch cows, 59,779; horses, 13,888; sheep, 9,708; swine, 17,854; poultry, 235,088; dairy products amounted to 29,530,826 gallons of milk. The value of dairy products is given at \$2,608,086. The total valuation of all farm property is given at \$30,276,650, an increase of 32 per cent. since 1900. Churches of all denominations are scattered throughout the county. Thirty-two agricultural organizations assist in bettering agricultural and social conditions. The 343 district schools, together with

*Farm is in hands of agent or real estate dealer.

the high schools of the villages, a State Normal School at Fredonia and St. Bonaventure's College at Allegany afford excellent educational advantages.

The county is traversed by several trunk lines of railways and branches which give it transportation facilities of the highest order. The Erie, Pennsylvania, Pittsburg and Rochester and other lines pass through this county in all directions.

TOWN OF ALLEGANY

Population 3,398

No. 53 — Farm of 97 acres; located $2\frac{1}{4}$ miles from Allegany P. O., R. D. 3; 2 miles from Russel's station on line of Pennsylvania R. R.; 10 rods from school; $2\frac{1}{2}$ miles from Catholic, Methodist and Lutheran churches; $\frac{1}{4}$ mile from cheese factory; $2\frac{1}{2}$ miles from milk station. Highways, good. Nearest large village and city, Allegany and Olean, population 14,743; distant $2\frac{1}{4}$ miles from Allegany and 5 miles from Olean. General surface of farm, part smooth and part hilly. Nature and quality of soil, gravel and loam. Acres in meadow, 20; in natural pasture, 77; in timber, 20, hard wood, maple, hemlock; 3 plum trees, 2 pear trees, 2 currant bushes, 150 apple trees. Best adapted to corn, oats, hay, potatoes and cabbage. Fences, wire, in good condition. Barn, 32x32, in good condition. House, in poor condition. Watered, house, by spring; barns, by spring; fields, by fine creek. 2 miles from Allegany River. Unoccupied. Has been used for pasturing for the last 10 years. Producing oil wells on the adjoining farm; no wells ever drilled on this farm. Reason for selling, owner lives in town and has poor health. Price, \$1,700. Terms, part down and the rest to suit purchaser. Address V. J. Nenno, Allegany, N. Y.

TOWN OF CARROLTON

Population 1,516

No. 54 — Farm of 600 acres, located $\frac{1}{2}$ mile from Limestone P. O.; $\frac{1}{2}$ mile from railway station at Limestone on line of Erie, B., R. & P. and Penn. R. R.; $\frac{1}{2}$ mile from school, church and milk station. Cheese factory on farm. Limestone Creek runs entirely across property. 200 acres of property lie within the village limits of limestone. Nature of highways, good. Nearest city, Bradford, Pa., population 20,000, 5 miles distant, reached by three railways, trolley and highway. Soil, flats, gravelly, hills, shale. Acres in meadow, 225; in natural pasture, 225; in timber, 150,

second growth, hard wood; acres tillable, 400. About 125 fruit trees. Best adapted to hay, grain, potatoes, corn, etc. Fences, barbed wire, fair condition. Four houses, fair condition; 9 barns, fair condition. Watered by well and spring. Occupied by owner. Reason for selling, old age of owner. Price, \$50 per acre. Terms, reasonable amount cash, balance on mortgage. One producing oil well on place and room to drill several more. Address Martin W. Wagner, 62 Main Street, Bradford, Pa.

No. 55 — Farm of 600 acres, located $\frac{1}{2}$ mile from Limestone P. O. and railway station, on line of B., R. & P. Ry., Erie & P. Ry.; $\frac{1}{2}$ mile from school, Protestant and Catholic churches; cheese factory on farm; $\frac{1}{2}$ mile from milk station. Highways, good. Nearest city, Bradford, Pa., 5 miles distant, reached by highway, three railroads and trolley line. Soil, flats, gravelly, hills, shale. Altitude, 1,400 feet. Acres in meadow, 225; in natural pasture, 225; in timber, 150; second growth, hard wood. Acres tillable, 400. Fruit, 100 apple trees. Best adapted to hay, grain, corn, potatoes, etc. Fences, barbed wire, fair condition. 4 houses, fair condition. 9 barns, fair condition. Watered, house and barns by well; fields by springs. Tuna Creek and Limestone Brook run through farm. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$50 per acre. Terms, reasonable amount cash, balance on mortgage. Address Martin W. Wagner, 62 Main Street, Bradford, Pa. Owner will rent with option to buy.

TOWN OF FARMERSVILLE

Population 948

*No. 56 — Farm of 133 $\frac{1}{2}$ acres, located 5 miles from Franklinville P. O., R. D. 2; 5 miles from railway station at Franklinville, on line of Penn. R. R.; 1 mile from school; 5 miles from Baptist, Methodist and Presbyterian churches; $\frac{1}{4}$ mile from cheese factory. Highways, somewhat hilly but good. Nearest cities, Buffalo, 50 miles distant, and Olean, 20 miles distant, reached by Penn. R. R. Surface of farm, hilly, but not too

*Farm is in hands of agent or real estate dealer.

steep to plow. Soil, clay loam. Acres in meadow, 50; in natural pasture, 53; in timber, 30, hard wood, beech, maple; acres tillable, 80. Fruit, 80 apple trees. Best adapted to hay and grains. Fences, wire, in fair condition. House, 8 rooms, in fair condition. Barn, 36x40, with basement, horse barn, 20x26, fair condition; henhouse, hoghouse and granary, all in good condition. Watered, house, by well; barns, by spring; fields, by springs. Crystal Lake, 7 miles distant; Lime Lake, 11 miles distant. This place will keep 18 to 20 cows and a team. Occupied by owner. Reason for selling, death of owner's wife. Price, \$2,600. Terms, \$1,000 down, balance at 5 per cent. Address A. B. Morgan, agent, Franklinville, N. Y.

*No. 57 — Farm of 168 acres, located $2\frac{1}{2}$ miles from Farmersville Station P. O.; $2\frac{1}{2}$ miles from railway station at Farmersville Station, on line of B. R. & P. R. R.; 1 mile from school; $2\frac{1}{2}$ miles from Baptist and Methodist churches; $1\frac{1}{2}$ miles from cheese factory; 8 miles from condensing plant. Highways, hilly but good. Nearest cities, Rochester and Buffalo, 45 miles distant, reached by B. R. & P. R. R. Surface of farm, level. Soil, clay loam. Acres in meadow, 75; in natural pasture, 75; in timber, 15, beech, maple and elm; acres tillable, 100. Fruit, 100 apple trees and small fruits. Best adapted to hay and grains. Fences, wire, in good condition. House, 10 rooms, nearly new. Barn, 36x60, in fair condition; granary, henhouse and hoghouse, in good condition. Watered, house, by well; field by springs. Crystal Lake, 4 miles distant; Lime Lake, 6 miles distant. Occupied by tenant whose lease expires March 1, 1912. This farm will keep 25 cows and a team. Reason for selling, owner has removed to city. Price, \$4,000. Terms, \$1,000 cash, balance on mortgage at 5 per cent. Address A. B. Morgan, agent, Franklinville, N. Y.

*No. 58 — Farm of $146\frac{1}{2}$ acres, located 1 mile from Farmersville Station P. O., R. D. 1; 1 mile from railway station at Farmersville Station, on line of B. R. & P. R. R.; 1 mile from school; 1 mile from Baptist and Methodist churches; 1 mile from cheese factory; 7 miles from condensing plant. Highways, level and good. Nearest cities, Rochester and Buf-

falo, 45 miles distant, reached by B. R. & P. R. R. Surface, level, small hill on west. Soil, gravel. Acres in meadow, 60; in natural pasture, 80; in timber, 6, hard wood; acres tillable, 100. Fruit, 35 trees, apples, pears and plums. Best adapted to hay, grain and potatoes. Fences, wire, excellent condition. House, 9 rooms, furnace, modern throughout. Barns, 36x62 and 28x30, in excellent condition, completely overhauled and rearranged, cement floor, hoghouse and good silo. Watered, house, by running water; barns, by running water; fields, by springs. Crystal Lake, 4 miles distant; Lime Lake, 6 miles distant. Will keep 25 to 30 cows. Occupied by owner. Reason for selling, owner wishes to retire. Price, \$7,000. Terms, easy. Address A. B. Morgan, agent, Franklinville, N. Y.

*No. 59 — Farm of 854 acres, located $2\frac{1}{2}$ miles from Franklinville P. O. and railway station, on line of Penn. R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from churches and butter factory; 1 mile from cheese factory and milk station. Highways, good. Surface of farm, 250 acres creek bottom, remainder level and rolling. Soil, gravel and clay loam. Acres in meadow, 350; in timber, 165, remainder in natural pasture. Fruit, apple orchard. Adapted to any crops grown in western New York. Fences, board and wire. Main house, 18 rooms with bath, furnace and lighted by approved gasoline system, and tenant house, 8 rooms, good condition. Main barn, 42x160, gambrel roof, 2 floors, cement basement, horse barn, 36x100. Watered, house and barn by running water, fields by creek and springs. Occupied by owner. Reason for selling, owner has other business. Price, \$42,500. Terms, $\frac{1}{4}$ down. Two nice trout streams run through place. This farm could be divided into 2 or 3 farms if desired by purchaser. Address A. B. Morgan, agent, Franklinville, N. Y.

*No. 60 — Farm of 168 acres, located $2\frac{1}{2}$ miles from Farmersville P. O. and railway station, on line of B. R. & P. R. R.; 1 mile from school; 2 miles from churches; $1\frac{1}{2}$ miles from cheese factory; $2\frac{1}{2}$ miles from milk station. Highways in fair condition. Nearest large village, Franklinville, population about 2,000, 7 miles distant, reached by rail

*Farm is in hands of agent or real estate dealer.

and highway. Surface sloping mostly to the south. Soil, black loam. Acres in meadow, 75, in timber, 15, balance in natural pasture. Fruit, apple orchard. Best adapted to peas, oats, corn, barley and hay. Fences, wire, fair condition. House, 10 rooms, nearly new. Outbuildings, barn, 30x60, with stable attached, hoghouse, henhouse and granary. Watered, house by well, fields by springs and creek. Occupied by tenant. Reason for selling, owner in other business. Price, \$4,200. Terms, reasonable payment down, balance on mortgage. Address A. B. Morgan, agent, Franklinville, N. Y. Owner will rent with option to buy.

*No. 61 — Farm of 146½ acres, located 1 mile from Farmersville P. O. and railway station, on line of B. R. & P. R. R.; 1 mile from school, churches, cheese factory and milk station. Highways in fair condition. Nearest large village, Franklinville, 7 miles distant, population about 2,000, reached by highway. Surface of farm comparatively level, 20 acres muck meadow land. Soil, good gravel loam and clay. Acres in meadow, 50, in timber, 10, balance in natural pasture. Fruit, small orchard of grafted fruit. Best adapted to hay, grain, good piece of alfalfa now growing. Fences, wire, good condition. House, 9 rooms, with furnace, new. Outbuildings, practically new gambrel roof barn, 36x62; horse barn, 28x30, gambrel roof; hog pen 16x24, and good silo. Watered, house by well, barn by creek, fields by spring and creek. Occupied by owner. Reason for selling, advanced age of owner. Barns have cement floors, patent stanchions, milk machine, etc. Price, \$7,000. Terms, ¼ down. Address A. B. Morgan, agent, Franklinville, N. Y.

TOWN OF FRANKLINVILLE

Population 2,663

*No. 62 — Farm of 105 acres, located 3½ miles from Franklinville P. O., R. D. 4; 3½ miles from railway station at Franklinville, on line of Penn. R. R.; 1 mile from school; 3½ miles from Baptist, Methodist, Presbyterian, Catholic and Episcopal churches; 3½ miles from butter factory; 1 mile from cheese factory. Highways, hilly but well cared for. Nearest cities, Olean, 20 miles distant, and Buffalo, 50 miles distant, reached by the Penn. R. R. Surface of

farm, on east slope, all but 4 or 5 acres workably level. Soil, clay loam, highly cultivated. Acres in meadow, 35; in natural pasture, 60; in timber, 10, hard wood; acres tillable, 85. Fruit, cherries and small fruits. Best adapted to hay, grain, corn and potatoes. Fences, wire, in excellent condition. House, 16x24, 16x16, hot water heat, bath, hardwood finish, cement cellar. Barn, 34x68, basement cemented, silo, toolhouse and henhouse, water tank in basement. Watered, house and barn, by drilled well; fields, by springs. Lime Lake, 6 miles distant. Occupied by owner. This farm is keeping 20 cows and 3 horses. Reason for selling, owner obliged to have a change of climate on account of his health. Price, \$5,500. Terms easy. Address A. B. Morgan, agent, Franklinville, N. Y.

*No. 63 — Farm of 305 acres, located 2½ miles from West P. O.; ¾ mile from railway station at Devereux, on line of B. R. & P. R. R.; ¼ mile from school; ¾ mile from Methodist church and cheese factory; 7 miles from condensing plant. Highways, level and good. Nearest cities, Buffalo and Rochester, 50 miles distant, reached by railway. Surface of farm, rolling. Soil, clay loam. Acres in meadow, 50; in natural pasture, 190; in timber, 60, hard wood, part has been culled; acres tillable, 200. Fruit, some old apple trees, a large quantity of wild berries, raspberries and blackberries. Best adapted to hay and grains. Fences, wire and brush, fair condition. House, 16x26, 12x14, nearly new, but neglected. Barn, 30x40, with shed attached, hoghouse and henhouse, all neglected. Watered, house, by well; barn, by creek; fields, by creek. Lime Lake, 7 miles distant. Occupied by tenant, but possession can be arranged at any time. Reason for selling, owner is a railway man and can give farm no attention. Price, \$4,270. Terms, \$2,000 cash. There is \$1,000 worth of pulp wood standing on this place. Buyer can sell this amount and have contract for cutting and delivery, if he wishes. Address A. B. Morgan, agent, Franklinville, N. Y.

TOWN OF FREEDOM

Population 1,159

No. 64 — Farm of 240 acres, located 3½ miles from Arcade P. O., R. D. 3; 3½ miles from railway station at Ar-

*Farm is in hands of agent or real estate dealer.

cade, on line of Penn. and B. & S. R. R.; $\frac{3}{4}$ mile from school; 2 miles from Methodist Episcopal church; $3\frac{1}{2}$ miles from Baptist and Congregational churches and butter factory; $2\frac{1}{2}$ miles from cheese factory; 3 miles from milk station; $3\frac{1}{2}$ miles from condensing plant. Highways, mostly level. Nearest village, Arcade, population 1,294; $3\frac{1}{2}$ miles distant, reached by highway; Buffalo, 40 miles distant. General surface of farm, rolling. Soil, hardpan, some gravel. Acres in meadow, 100; in natural pasture, 90; in timber, 40, maple, beech, a maple sugar bush; all tillable, except the woodland. Fruit, 75 apple, 3 pear and 2 plum trees. Best adapted to dairying, hay, oats, wheat, corn, buckwheat. Fences, wire, in good condition. House, good-sized, 10 rooms, in good condition. Cow barn, 100x30; horse barn, 30x40; hogpen, 15x25, upper part used as henhouse; all in good condition. Watered, house and barns, by well, also by drilled well 61 feet; fields, by springs. Crystal Lake, 3 miles distant. A good dairy farm; Merrill Soule Powdered Milk Co. calls for milk every day. Beautiful scenery from farm. Occupied by owner. Reasons for selling, owner a woman. Price, \$7,000. Terms on application. Address Mrs. A. H. Cramer, Arcade, N. Y., R. D. 3. This farm will be sold together with the two farms owned by G. E. Cramer, located in town of Arcade, Wyoming Co., as they are adjoining, if desired.

*No. 65—Farm of 218 acres, located 2 miles from Freedom P. O., $\frac{1}{2}$ mile from railway station at Crystal Lake, on line of B. & S. and B. R. & P. Rys., $\frac{1}{2}$ mile from school and milk station, 2 miles from churches and cheese factory. Highways, good. Nearest large village, Arcade, population about 1,500, $7\frac{1}{2}$ miles distant, reached by rail and highway. Surface of farm quite level. Soil, gravel and clay loam. Acres in timber, 25; maple, beech and basswood. Good orchard. Best adapted to hay, grain and potatoes. Fences, mostly wire. House, 12 rooms, good condition. Outbuildings, wood house, 18x24, new barn 36x80, with gambrel roof and cement basement, swing stanchions, hen house, 12x20, hog house, 20x30, granary in barn. Watered, house by well, barn by trough, fields by springs. This farm is $\frac{1}{2}$ mile from Crystal Lake. Unoccupied. Reason for selling, owner has other business. Price,

\$6,000. Terms, $\frac{1}{3}$ down. Address A. B. Morgan, agent, Franklinville, N. Y.

*No. 66—Farm of 111 acres, located $2\frac{1}{2}$ miles from Freedom P. O., 1 mile from railway station at Crystal Lake, on line of B. & S. Ry., $\frac{3}{4}$ mile from school, $2\frac{1}{2}$ miles from churches, 1 mile from cheese factory and milk station. Powdered milk factory wagon passes farm. Nearest large village, Arcade, 7 miles distant, population about 1,500, reached by rail and highway. Highways good, comparatively level. Surface of farm rolling. Soil, gravel loam. Acres in timber, 15; sugar bush of about 1,000 trees. Best adapted to hay, grain and potatoes. Fences, mostly wire, fair condition. House, 10 rooms, fair condition, fine cellar. Outbuildings, barn, 30x40; barn, 26x36; barn, 24x35; hen house, granary and good sugar house. Watered by well and springs. Crystal Lake is $\frac{1}{4}$ mile from farm. Occupied by tenant. Reason for selling, to close an estate. Price, \$3,500. Address A. B. Morgan, agent, Franklinville, N. Y.

*No. 67—Farm of 21 acres, located $\frac{1}{2}$ mile from Freedom P. O. and railway station, on line of B. R. & P. Ry., $\frac{1}{4}$ mile from school, $\frac{3}{4}$ mile from cheese factory. Powdered milk factory wagon passes house. Highways in fair condition. Nearest large village, Arcade, 6 miles distant, population about 1,500, reached by rail and highway. Surface of farm level. Soil, rich loam. Acres tillable, 21. Fences, wire, good condition. House, 12 rooms, cemented cellar. Outbuildings, barn 30x60 with gambrel roof. Watered by well. This farm is 1 mile from Crystal Lake. Occupied by owner. Price, \$4,500. Address A. B. Morgan, agent, Franklinville, N. Y.

*No. 68 — Farm of $246\frac{3}{4}$ acres, located $1\frac{1}{2}$ miles from Freedom P. O. and railway station, on line of B. R. & P. R. R.; $1\frac{1}{2}$ miles from school and churches; 1 mile from cheese factory; $4\frac{1}{2}$ miles from milk condensing plant. Highways in fair condition. Nearest large village, Arcade, population about 1,500, reached by rail and highway. Surface of farm, part level and part rolling. Soil, clay loam and gravel. Acres in meadow, 75, in timber, 20, hard wood. All tillable except woodland. Large orchard. Best adapted to hay and potatoes. Fences in

*Farm is in hands of agent or real estate dealer.

fair condition. House, 10 rooms with good cellar, fair condition. Outbuildings, barn 30x55, barn 28x43, barn 26x36, barn 24x36, barn 16x30, granary 12x20 and large hog house. Watered by well, springs and brooks. Occupied by tenant. Reason for selling, to close an estate. Price, \$25 per acre. Terms, \$1,500 down, balance on mortgage at 6 per cent. Address A. B. Morgan, agent, Franklinville, N. Y.

*No. 69 — Farm of 115 acres; located 2½ miles from Sandusky P. O. and railway station, on line of B. & S. R. R.; ¾ mile from school; 2½ miles from Protestant churches and milk station; 4½ miles from butter factory and milk station; ½ mile from cheese factory. Highways, generally good. Nearest large village, Arcade, 4½ miles distant, population about 1,500, reached by rail and highway. Surface of farm comparatively level. Soil, loam and gravel. Acres in meadow, 40, in timber, 12, sugar bush of 300 trees, beech, basswood and elm. Fruit, orchard of about 100 trees. Best adapted to potatoes, hay and all hardy grain crops. Fences, mostly wire, good condition. House, 13 rooms, upright 26x28, wing 18x33, good cellar. Outbuildings, barn 40x70 with cement basement, barn 26x36, hog house 14x18, granary 14x16. Watered, house and barn by running spring water, fields by springs and creek. This farm is ¾ mile from Beaver Lake. Occupied by owner. Reason for selling, ill health of owner. Price, \$6,000. Terms, ½ down, balance to suit purchaser. Address A. B. Morgan, agent, Franklinville, N. Y.

*No. 70 — Farm of 200 acres; located 2 miles from Freedom P. O. and railway station, on line of B. R. & P. R. R.; 2 miles from school and church; 1 mile from cheese factory; 1½ miles from powdered milk plant. Highways in fair condition. Nearest large village, Arcade, population about 1,500, reached by rail and highway. Surface of farm, part level and part rolling. Soil, clay, loam and gravel. Acres in meadow, 60, in timber, 20, hard wood. Good productive orchard. Best adapted to potatoes, hay, grain, etc. Fences, mostly wire, good. House 28x28, upright with wing 22x28, good cellar. Outbuildings, barn 26x80, gambrel roof and basement, nearly new. Watered, house by well, barn by trough, fields by springs and

creek. Crystal Lake, 3 miles distant. Occupied by owner. Reason for selling, owner wishes to retire. Price, \$7,000. Terms, 1/3 down. Address A. B. Morgan, agent, Franklinville, N. Y.

TOWN OF NEW ALBION

Population 1,989

No. 71 — Farm of 165 acres, ½ mile from New Albion P. O.; 4 miles from Cattaraugus. House, large and in good condition. Barns, in good condition. Good orchard. A large quantity of hardwood timber. Land mostly new and well adapted to hay and grain. Watered by creek and several springs. Price, \$5,000. Will rent for cash, tenant to furnish stock. Address A. P. Burroughs, Suffern, N. Y.

No. 72 — Farm of 316 acres, located 3 miles from Cattaraugus P. O., R. D. 1, and railway station, on line of Erie R. R.; 4 miles from Little Valley, the county seat; 1 mile from school; 3 miles from churches, Methodist, Baptist and Catholic; 2 miles from butter factory; 1 mile from cheese factory; 3 miles from milk station. Highways, good. Twelve miles from Salamanca, reached by trolley from Little Valley. Surface of farm gently rolling, no steep grades. Altitude, about 1,200 feet. Soil, volusia series, light loam, hardpan subsoil. Acres in meadow, 80, in natural pasture, 50; in timber, 75, maple, beech, chestnut, basswood, ash, etc.; acres tillable, 225. About 60 apple trees. Best adapted to potatoes, oats, corn and hay. Wire fences, in good condition. Nine-room, 2-story house, newly painted inside and outside, modern. Main barn with basement stable cement floor, 90x34, in good condition; toolhouse, 24x30, adjoining; granary, 20x24; shop, 18x22; small hen-house. Engine house over well adjoining shop. House watered by running water piped from spring to cellar; barns, water pumped from drilled well directly into stable by gasoline engine. Occupied by tenant. Reasons for selling, owner lives too far away to manage farm. Price, \$30 per acre. \$10,000 will take the farm, dairy of 30 cows, tools. A 1-horse gasoline engine for pumping, etc.; new silo, 16x33, was built last year; 2 concrete watering troughs, etc. Address Chas. H. Glidden, Little Falls, N. Y., or William J. Milne, Albany, N. Y.

*Farm is in hands of agent or real estate dealer.

TOWN OF PERRYSBURG

Population 1,184

*No. 73 — Place of one acre, located 10 rods from Perrysburg P. O. and railway station, on line of Erie R. R.; 30 rods from school; $\frac{1}{4}$ mile from Protestant Church; 80 rods from cheese factory; 10 rods from milk station. Highways good. Nearest city, Buffalo, 40 miles distant, reached by rail and highway. Surface level. Altitude about 1,300 ft. Fine soil. Fruit, pears, apples, plums and cherries. Adapted to truck farming or poultry. Fences, wire and picket, good condition. House, 9 rooms. Shed, 8x14. Watered by well. Occupied by tenant. Reason for selling, owner has other property and cannot attend to this place. Price, \$1,000. Terms liberal. Address B. H. Graves, agent, Perrysburg, N. Y.

No. 74 — Place of 5 acres, located $1\frac{1}{2}$ mile from Perrysburg P. O., $\frac{3}{4}$ of a mile from railway station at West Perrysburg, on line of Erie R. R.; $1\frac{1}{2}$ mile from school and churches; $1\frac{1}{2}$ miles from cheese factory; $\frac{3}{4}$ of a mile from milk station. Highways level and in good condition. Nearest large village, Gowanda, 5 miles distant. Surface level. Acres tillable, $3\frac{1}{2}$. Fruit, 53 apple trees and 8 plum trees, 1 acre of grapes. Best adapted to corn, oats, buckwheat, etc. Fences, wire, fair condition. House, 7 rooms, fair condition. Outbuildings, barn 16x22, nearly new, stables for two horses and two cows, chicken house 20x70, good repair. Watered by well and three never failing springs. Occupied by owner. Reason for selling, owner intends to enter ministry. Price, \$1,000. Terms, $\frac{1}{2}$ cash and \$100 annually. Address A. H. Norrington, Perrysburg, N. Y. Owner will rent for money rental.

TOWN OF PERSIA

Population 1,730

No. 75 — Farm of 235 acres, 2 miles from Gowanda, R. D. Good loamy soil. One hundred and fifty acres meadow and pasture and 85 acres timber. House, 20x26, wing, 16x20, with kitchen and woodshed attached. Barns and outbuildings suitable for farm. Price, \$5,800. Terms, $\frac{1}{2}$ cash and 5% interest on balance. Address E. P. Sellev, 207 Walnut Place, Philadelphia, Pa.

*No. 76 — Farm of 25 acres, located $1\frac{1}{2}$ miles from Gowanda P. O., R. D. 3; $1\frac{1}{2}$ miles from railway station at Gowanda, on line of Erie R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{2}$ miles from seven churches; $1\frac{1}{2}$ miles from milk station. Highways, good. Surface, somewhat hilly. Soil, loam and gravel. Acres in natural pasture, 15; in timber, 10, beech, maple, chestnut, hemlock, etc.; acres tillable, 15. Best adapted to wheat, corn, oats, potatoes, etc. Fences, wire. No house or barn. Watered by spring and brook. Occupied by tenant. There is a fine water power site at one end of place. Dam could be constructed 65 feet high and 110 feet long, giving a fall of 80 to 90 feet. Reason for selling, owner has too much land. Price, \$3,000 with water rights, or \$1,500 without water rights. Terms to suit buyer. Owner will rent for cash for term of 1 to 10 years, or with option to buy. Address Norman B. Allen, Gowanda, N. Y.

*No. 77 — Farm of 50 acres, located $1\frac{1}{4}$ miles from Gowanda P. O., R. D. 3; $1\frac{1}{4}$ miles from railway station at Gowanda, on line of Erie R. R.; $1\frac{1}{4}$ miles from school and churches; $\frac{1}{4}$ mile from cheese factory. Highways, good. Nearest village, Gowanda, population 2,012. General surface features of farm, hilly. Soil, gravelly loam. Acres in meadow, 15; in timber, 35, chestnut, hemlock, beech, maple, hickory; acres tillable, 15. Fruit, 25 apple trees. Best adapted to crops. Fences, wire, mostly good. Watered by never-failing springs and brook. Occupied by tenant. There are no buildings on this property. Reason for selling, owner has too much land. Price, \$2,000. Terms, \$500 cash, balance to suit purchaser. Address Norman B. Allen, 117 Main Street, Gowanda, N. Y. Owner will rent for cash for term of 1 to 10 years or with option to buy.

*No. 78 — Farm of 16 acres; located $1\frac{1}{2}$ miles from Gowanda P. O., R. D. 3; $1\frac{1}{2}$ miles from Gowanda railway station, on line of Erie R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{2}$ miles from churches; $\frac{1}{2}$ mile from cheese factory. Highways, good. Nearest village, Gowanda, population 2,012, distant $1\frac{1}{2}$ miles, reached by highway. General surface features, hilly. Soil, loam. All natural pasture and timber, beech, maple, hickory and chestnut; acres tillable, about 8. Well

*Farm is in hands of agent or real estate dealer.

adapted to all crops. Fences, good, wire. Watered by springs and brook, never-failing. Occupied by tenant. Reasons for selling, too much land. Price, \$500. Terms, \$200 cash, balance on easy terms. There are no buildings on this property. A farm of 50 acres adjoining can be bought with the above if desired. Owner will rent for cash for term of 1 to 10 years or with option to buy. Address Norman B. Allen, 117 Main Street, Gowanda, N. Y.

TOWN OF RANDOLPH

Population 2,486

*No. 79 — Farm of 97 acres, located $4\frac{1}{2}$ miles from Randolph P. O. and railway station, on line of Erie R. R.; 120 rods from school; $1\frac{1}{2}$ miles from Protestant and Catholic churches; $4\frac{1}{2}$ miles from cheese factory and milk condensing plant; 2 miles from milk station. Highways, level. Nearest large village, Salamanca, 15 miles distant, population about 7,000, reached by highway. Surface of farm mostly level. Soil, dark and rich. Acres in meadow, 24; in natural pasture, 20; in timber, 3. Acres tillable, 50. Fruit, apples, plums and cherries. Best adapted to potatoes, oats and corn. Fences, wire, good condition. No house, but timber enough to build one on farm. Outbuildings, chicken house and sheds. Watered by well, spring and brook. Occupied by owner. Reason for selling, owner in other business. Price, \$1,100. Terms, \$600 cash, mortgage for balance. Address W. J. Gilberts, agent, 9-10 Gokey Building, Jamestown, N. Y. Owner will rent with option to buy.

*No. 80 — Farm of 50 acres, located $4\frac{1}{2}$ miles from Randolph P. O. and railway station, on line of Erie R. R.; 120 rods from school; $1\frac{1}{2}$ miles from churches; $4\frac{1}{2}$ miles from cheese factory and milk condensing plant; 2 miles from milk station. Highways, level. Nearest large village, Salamanca, population 7,000, 15 miles distant, reached by highway. Surface of farm mostly level. Soil, dark and clay subsoil. Acres in meadow, 15; in natural pasture, 10; in timber, 12, second growth. Acres tillable, 38. Fruit, apples, plums and pears. Best adapted to hay, oats and corn. Fences, wire, good condition. House, 8 rooms, 2 stories, upright 18x24, leanto 18x24. Outbuildings, barn 20x24 with

two leantos, stables, buggy shed and basement hogpen. Watered, house by well, barns by spring, fields by brooks. Occupied by owner. Reason for selling, owner in other business. Price, \$900. Terms, \$400 cash, balance on mortgage. Address W. J. Gilberts, 9-10 Gokey Building, Jamestown, N. Y.

TOWN OF SOUTH VALLEY

Population 584

No. 82 — Farm of $154\frac{1}{2}$ acres, located 3 miles from Onoville P. O. and $3\frac{1}{2}$ miles from railway station at Onoville, on line of Pennsylvania R. R.; 30 rods from school; 3 miles from churches and cheese factory. Highways, good. Nearest city, Jamestown, population about 32,000, 12 miles distant, reached by rail and highway. Surface of farm, part rolling and part rough. Altitude, about 1,530 feet. Soil, gravel and clay. Acres in meadow, 50; in natural pasture, 50; in timber, 54, chestnut and pine. Acres tillable, 75. Fruit, 50 apple trees. Best adapted to hay, oats, buckwheat and potatoes. Fences, wire, good condition. House, 11 rooms, 4 closets and cellar, new. Outbuildings, 2 large barns, 1 underground stable, granary, hog and henhouse. Watered by springs. Occupied by owner. Reason for selling, advanced age of owner. Price, \$4,000. Terms, part cash, remainder on easy terms. Address Frank Colwell, Onoville, N. Y.

No. 83 — Farm of 78 acres, located $\frac{1}{2}$ mile from Onoville P. O.; $1\frac{1}{2}$ miles from railway station at Onoville, on line of W. N. Y. & P. R. R.; $\frac{1}{4}$ mile from school, Catholic and Protestant churches; $\frac{1}{2}$ mile from butter factory. Highways, good condition. Nearest city, Jamestown, 17 miles distant, population about 32,000, reached by highway. Surface of farm, rolling. Altitude, 1,200 feet. Soil, sandy loam. Acres in meadow, 15; in natural pasture, 50; in timber, 13, oak, chestnut and hardwood. Acres tillable, 40. Fruit, 25 apple trees. Best adapted to corn, potatoes and oats. Fences, wire. House 20x24, good condition. Outbuildings, barn 32x50, barn 26x30. Watered by spring and brook. Occupied by owner. Reason for selling, advanced age of owner. Price, \$30 per acre. Terms, easy. Address Levi Parker, Onoville, N. Y.

*Farm is in hands of agent or real estate dealer.

No. 84 — Farm of 144½ acres, located 7 miles from Frewsburg P. O., R. D. 86; 5 miles from railway station at Onoville, on line of Penn. R. R.; 1¼ miles from school; 1½ miles from church and butter factory; 7 miles from milk condensing plant. Highways, good. Nearest city, Jamestown, 11 miles distant, population about 32,000, reached by highway. Surface of farm, rolling. Altitude, about 1,900 feet. Soil, good, clay loam. Acres in meadow, 42; in natural pasture, 57½; in timber, 45, chestnut

and hardwood. Acres tillable, 42. Fruit, 90 apple, 12 plum, 8 pear, 8 peach trees; also currants, gooseberries and strawberries. Fences, wire and rail, good condition. House, 9 rooms, good condition. Outbuildings, barn 38x48 with cement basement, barn 30x30, henhouse and hoghouse. Watered, house and barns by well, fields by springs. Occupied by owner. Reason for selling, advanced age of owner. Price, \$30 per acre. Terms, one-half cash, balance on mortgage. Address Herbert Morrill, Frewsburg, N. Y.

CAYUGA COUNTY

Area, 752 square miles. Population, 67,106. Annual precipitation, 44.71 inches. Mean temperature, 50.4°. Number of farms, 4,785. Average price of farm land per acre, \$50.40. County seat, Auburn.

Located in the central part of the state in the inland lake section. Its boundaries are long, narrow and irregular, trending north and south. The northern line is bounded by Lake Ontario, the lower western part by Lake Cayuga and touching Skaneateles Lake on the east. Lake Owasco is located in the center of the county, not far from the city of Auburn.

The surface features of the county are undulating. The Seneca River traverses the upper half of the county with numerous small streams affording good water power and giving, with the ponds and lakes of the county, an abundant supply of excellent water.

The soil is very fertile, consisting of a fine quality of sandy or gravelly loam intermixed with clay, muck and alluvium in the northern part, and a very productive gravelly and clay loam in the southern part. Markets are easily reached over the New York Central, the Lehigh Valley and the electric lines that traverse almost every portion of the county. The highways are in excellent condition. Along the shores of Lake Cayuga are numerous quarries of water lime, quicklime, gypsum and sand stone.

There are reported on the farms of the county 103,173 domestic animals and 360,543 head of poultry. The products of the county are milk, 14,034,684 gallons from 27,199 dairy cows, the total receipts for all dairy products being \$1,251,408. The principal crops are corn, 850,149 bushels; oats, 1,210,652 bushels; barley, 300,512 bushels; buckwheat, 388,598 bushels; potatoes, 1,037,839 bushels; hay and forage, 151,721 tons. The county ranks first in barley and buckwheat, second in corn and poultry, fifth in honey and seventh in oats. Cayuga County is also an excellent fruit county. Apples, cherries, peaches, pears, plums and prunes are raised in abundance and are of the finest quality. There are scattered throughout the county a number of excellent district schools, high and graded schools, all up to the standard of excellence demanded by the state. Wells College for women is located at Aurora. The total value of farm property in this county is \$26,915,448, an increase of 19.8 per cent. over the value given in 1900.

TOWN OF IRA

Population 1,451

No. 85 — Farm of 262½ acres, located ½ mile from Cato P. O.; ½ mile from railway station at Cato, on line of L. V. R. R.; ½ mile from school; ½ mile from church; ¾ mile from butter factory; ¾ mile from milk station. Highways, good, state road. Nearest large village, Cato, population 374, ½ mile distant, reached by highway. Surface of farm, rolling. Altitude, 461 feet.

Good, rich soil. Acres in meadow, 45; in natural pasture, 35; in timber, 25, beech, maple and hemlock; acres tillable, 175. Best adapted for dairy and grain farm. Fences in poor condition. House, medium size, in fair condition. There are two sets of buildings, two good orchards and sugar bush on this farm. Barns and tobacco shed in good condition. Watered, house and barns, by well; fields, by springs. This farm lies just outside the village of Cato and is

an extra good farm. Cross Lake, 2½ miles distant. Occupied by owner. Reason for selling, to settle an estate. Price, about \$15,000. Address Boyle Cook Estate, Cato, N. Y.

No. 86 — Farm of 200 acres, located 8 miles from Meridian P. O., R. D. 49; 5 miles from railway station at Cato, on line of L. V. R. R.; ½ mile from school; 3 miles from churches; 3½ miles from butter factory; 5 miles from cheese factory; 5 miles from milk station; 11 miles from milk condensing plant. Highways fairly good. Nearest city, Fulton, 12 miles distant, population about 10,000, reached by highway. Surface of farm a little rolling. Soil, gravelly and clay loam. Acres in meadow, 25; in natural pasture, 10; in timber 40, beech, maple, elm and ash. Acres tillable, 150. Fruit, 100 apple, 20 cherry, 10 pear and 10 plum trees. Adapted to all crops grown in this climate. Fences, barbed wire and woven wire. House, upright 18x28, south wing 16x36, north wing 20x24, suitable for two families. Outbuildings, barn, 100x32; cow stable, 24x60; tobacco shed, 24x60; hoghouse, cornhouse and henhouse. Watered by well and springs. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$9,000. Terms, \$2,000 down, balance on mortgage at 5% interest. Address Isaac O. Blake, 138 Van Anden Street, Auburn, N. Y. Owner will rent.

TOWN OF LEDYARD

Population 1,719

No. 87 — Farm of 32 acres, located 2 miles from Aurora P. O., R. D. 29; 1¼ miles from railway station at Levanna, on line of L. V. R. R.; 1 mile from school; 2 miles from Catholic and Protestant churches; 2 miles from skimming station and milk station. Highways in good condition. Nearest city, Auburn, 14 miles distant, population about 35,000, reached by rail and highway. Surface of farm level. Altitude about 600 feet. Soil, loam, clay sub-soil. Acres in timber 6. Acres tillable, 26. Fruit, vineyard all in bearing. This is a vineyard farm. Best adapted to grapes, also good for alfalfa. No fences. Outbuildings, packing house which could be made in 4 rooms at very little expense, good cellar, large shed for storing, etc. Watered by well and cistern. This farm is 1 mile from Cayuga Lake. Would be a good place for poultry farm.

Occupied by owner. Reason for selling, owner has business in Philadelphia. Price, \$1,700. Terms, \$1,000 cash, remainder on mortgage. Address L. J. Davenport, Aurora, N. Y., R. D. 29.

No. 88 — Farm of 28 acres, located 2 miles from post-office at Aurora, R. D. 29; 1¼ miles from railway station at Levanna, on line of L. V. R. R.; 1 mile from school; 2 miles from churches, butter factory and skimming station. Highways good. Nearest city, Auburn, population about 35,000, 14 miles distant, reached by rail and highway. Surface of farm mostly level. Altitude about 600 feet. Soil, loam, clay sub-soil. Acres in meadow, 7; in timber, 4, hemlock, oak and basswood. Acres tillable, 22. Fruit, 70 apple trees, 8 acres of pears, all bearing. Adapted to fruit and poultry. Land is tile drained. House, 9 rooms, good condition. Outbuildings, one barn, 20x30, with cow sheds and wagon shed adjoining; corn crib and small chicken house. Watered by well and cistern. This farm is 1 mile from Cayuga Lake. Occupied by owner. Reason for selling, owner has other business in Philadelphia. Price, \$3,200. Terms, \$1,700 down, balance on mortgage. This farm adjoins the 32-acre farm described above and will be sold together for \$4,700. Address L. J. Davenport, Aurora, N. Y., R. D. 29.

No. 89 — Farm of 110 acres, located 2 miles from Aurora P. O., R. D. 29; 1¼ miles from railway station at Levanna, on line of L. V. R. R.; 1 mile from school; 2 miles from Protestant and Catholic churches; 2 miles from butter factory and skimming station. Highways in good condition. Nearest city, Auburn, 14 miles distant, population 35,000, reached by rail and highway. Surface of farm level. Altitude about 600 feet. Soil, dark loam, clay sub-soil. Acres in meadow, 35; in natural pasture, 15; in timber 15, sugar maple, basswood, hickory and oak. Acres tillable, 80. Fruit, 20 apple trees, 30 peach trees and 8 cherry trees. Adapted to all crops grown in this climate, ideal for alfalfa. Fences, woven wire, mostly new. House, 9 rooms, good condition. Outbuildings, barn, 20x60; barn, 36x65, good condition; pighouse, tool shed, work shop, corn crib and several chicken houses. Watered, house by well and cistern, barns by well, fields by well. This farm is one mile from Cayuga Lake. Occupied by owner. Reason for selling, owner has other business in Philadelphia. Price, \$55 per

acre. Terms, \$2,700 down, balance on mortgage. This would make a fine fruit or poultry farm. Address L. J. Davenport, Aurora, N. Y., R. D. 29.

TOWN OF MORAVIA

Population 2,160

*No. 90 — Farm of 12 acres, located near Moravia P. O.; $\frac{1}{3}$ mile from railway station at Moravia, on line of L. V. R. R.; 15 rods from high school and from Baptist, Methodist, Congregational and Catholic churches; 3 miles from cheese factory; $\frac{1}{2}$ mile from milk station. Highways, good. Nearest large village, Moravia, population 1,324. Surface of farm, hilly. Soil, good. Acres in meadow, 10. Small amount of fruit. Best adapted to meadow and pasture. Fences in good condition. Large 2-story house, 30x40, in good condition. Barns, large; large henhouse, in fair condition. House, barns and fields watered by springs. Four miles from Owasco Lake; 9 miles from Skaneateles Lake. Fine place for poultry farm. House large enough for two families if desired. Reason for selling, owner is too far away to care for farm. Price, \$3,200. Terms easy. Address H. M. Jewett, agent, Moravia, N. Y. Owner will rent on shares.

TOWN OF OWASCO

Population 1,393

No. 91 — Farm of 286 acres, located $3\frac{3}{4}$ miles from Auburn P. O., R. D. 8; 4 miles from railway station at Auburn, on line of N. Y. C. and L. V. R. R.; 40 rods from school; 1 mile from church; 2 miles from butter factory; 4 miles from milk station. Highways, crushed stone, good. Nearest city, Auburn, population 34,668, $3\frac{3}{4}$ miles distant, reached by highway. Surface, mostly level, some rolling. Soil, limestone loam. Acres in meadow, 70; in natural pasture, 50; in timber, 25, beech, elm, ash and soft maple; acres tillable, 250; 110 acres of splendid new seeding, 50 acres of which are in alfalfa. 120 apple trees, 6 or 8 pear trees, small fruit. Best adapted to alfalfa, corn, wheat, potatoes, cabbage, all kinds of grain, vegetables, etc. Fences, wire, fair condition. House, 30x40, just painted, in good condition. Main barn, 36x100, with basement; shed, 26x48; horse barn, 30x40; corn and hay-house, 18x20; henhouse, 16x18; all in first-class repair. Watered, house, by

drilled well; barns, by reservoir; fields, by spring and brook whole length of farm. Two and one-half miles from Lake Owasco, in sight of house; also fine view of Auburn and surrounding country. Occupied by tenant. Reason for selling, owner has no time to look after it. Price, \$65 per acre. Terms, $\frac{1}{2}$ cash, balance to suit purchaser, interest at 5% Address F. C. Shaw, Newark, N. Y.

TOWN OF SEMPRONIUS

Population 756

No. 92 — Farm of 182 acres, located 2 miles from New Hope P. O., R. D. 59; 7 miles from railway station at Moravia, on line of L. V. R. R.; $\frac{3}{4}$ mile from school; 2 miles from Protestant and 7 miles from Catholic church; 2 miles from butter factory and cheese factory; 7 miles from milk station and condensing plant. Highways good. Nearest city, Cortland, 12 miles distant, reached by highway. Soil, clay and muck. Acres in meadow, 140; in natural pasture, 32; in timber 10, oak, maple, birch, beech and hemlock. Acres tillable, 140. Fruit, 50 apple and some pear trees. Surface of farm, part level, part rolling. Best adapted to potatoes, cabbage, oats, corn, barley and hay. Fences, mostly wire, good condition. House, 14 rooms, cellar under whole house, newly painted. Out-buildings, large barn, 83x36, with basement; horse barn and carriage house, 30x50; hay barn, 30x24; hog and hen house, all newly painted. Watered, house by well; barns by living spring. Occupied by owner. Reason for selling, poor health of owner. Price, \$30 per acre. Terms easy or 5% off for cash. Address John Horan, Moravia, N. Y., R. D. 59.

TOWN OF THROOP

Population 960

No. 93 — Farm of 100 acres, located $2\frac{1}{2}$ miles from Auburn P. O.; 2 miles from railway station at Auburn, on line of N. Y. C. and L. V. R. R.; $\frac{3}{4}$ mile from school; $\frac{3}{4}$ mile from Baptist and Presbyterian churches; $2\frac{1}{2}$ miles from milk station. Highways, good. Nearest city, Auburn, population 34,668, $2\frac{1}{2}$ miles distant, reached by highway, 1 mile from city line. Surface of farm, part level, part rolling. Soil, good loam, little clay. Acres in meadow, 20; in natural pasture, 30; in timber, 5, beech and maple; acres

*Farm is in hands of agent or real estate dealer.

tillable, 90. Fruit, 40 apple trees, 15 pear trees, a few plum and crab apple trees. Adapted to all kinds of hay and grain. Fences, barbed wire, fair. House, 8 rooms. Barns, 34x24 and 34x46. Watered, house and barn, by well; fields, by spring. Four miles from Owasco Lake. Good sand bank on farm. Good dairy farm or a good farm for garden truck. Occupied by tenant, leased for 1 year, with privilege of longer if not sold. Reason for selling, owner lives too far away to handle to advantage. Price, \$6,000. Terms, \$1,000 cash. Address Lilian R. Arnold, Seneca Falls, N. Y. Owner will rent.

TOWN OF VENICE

Population 1,343

No. 94 — Farm of 105 acres, located 1 mile from Venice Center P. O. and railway station, on line of N. Y. A. & L. R. R.; 4 miles from butter factory; 1 mile from milk condensing plant. Highways, good. Nearest city, Auburn, 15½ miles distant, reached by rail and highway. Surface, partly level and partly rolling. Altitude, 1,100 feet above sea level. Good soil. Acres in meadow, 20; in natural pasture, 30; in timber, 10, beech, maple and basswood; acres tillable, 75. Fruit, apples, peaches, plums and pears. Adapted to all kinds of crops grown in this climate. Fences, wire, board and rail, not very good. House, 39x36, good condition. Outbuildings: barn, 30x90; horse barn, 30x36; cow barn; 2 hen houses; hoghouse. Watered by well and spring. This property is 10 miles from Cayuga Lake; Owasco Lake, 5 miles distant. Reason

for selling, advanced age and poor health of owner. Price, \$5,500. Terms, \$2,000 mortgage can remain. Would sell 80 acres with the 105 described above. There are two sets of buildings, two orchards and small fruits and eighteen acres of timber on this property. Will sell both farms for \$9,500. Address Amos Emory Hutcheson, Venice Center, N. Y.

*No. 95 — Farm of 200 acres, located 6 miles from Moravia P. O., R. D. 19; 2½ miles from railway station at Venice Center, on line of Auburn & Ithaca R. R.; ½ mile from school; 2½ miles from Baptist and Methodist churches; 4 miles from Catholic church; 2½ miles from butter factory; 2½ miles from milk station. Highways, good. Nearest city, Auburn, population 34,668, 16 miles distant, reached by rail or highway. Surface of farm, mostly level, part slightly rolling. Altitude, 1,200 feet. Soil, good. Acres in meadow, 60; in natural pasture, 25; in timber, 20; acres tillable, 155. Small orchard, mostly apples. Best adapted to oats, barley, wheat, buckwheat, corn, potatoes. Fences, fair condition. Good-sized house, in good condition. Hay barn, 80x40; grain barn, 70x34; sheds, horse barn, hogpen, chicken-house, all in fair condition. Watered, house, by 2 wells; barns, by well; fields, by brook 5 miles from Owasco Lake, 10 miles from Cayuga Lake. Occupied by tenant; lease expires April 1, 1912. A good, productive farm. Reason for selling, owner lives at a distance from farm and cannot care for it. Price, \$11,000. Terms to suit purchaser. Address Henry M. Jewett, agent, Moravia, N. Y.

CHAUTAUQUA COUNTY

Area, 1,099 square miles. Population, 105,126. Annual precipitation, 39.09 inches. Annual mean temperature, 50.3°. Number of farms, 7,500. Average price of farm land per acre, \$58.38. County seat, Mayville.

Located in the southwest corner of the state bordering on the waters of Lake Erie.

The surface features are mostly hilly and rolling upland. A bluff of 20 or 30 feet elevation extends along the lake front, and from its summit the land spreads out in an undulating region, gradually rising for a distance of three or four miles. This comparatively level tract is bordered by the declivities of a hilly upland which covers the central and southern portions of the county. These uplands are broken by deep valleys. The county is well watered, there being several small lakes in the highlands. The soil of the uplands is principally clay, mixed with disintegrate shale, generally known as flat gravel. In the valleys is found a fine quality of sandy and gravelly loam mixed with alluvium. Along the lake shore is a strip of very productive clay loam. The uplands of the county are all arable to their summits. This is the greatest grape producing county in the United States. The last census shows

* Farm is in hands of agent or real estate dealer.

that 3,582 carloads of grapes, 1,225,000 gallons of grape juice and 750,000,000 gallons of wine were produced on the 35,000 acres of vineyard land. The other leading products are as follows: corn, 500,850 bushels; oats, 846,513 bushels; buckwheat, 257,341 bushels; barley, 36,392 bushels; wheat, 19,379 bushels; potatoes, 778,277 bushels; hay and forage, 228,907 tons. In respect to livestock the number of farms reporting domestic animals is 6,963, classified as follows: dairy cows, 49,648; horses, 17,363; swine, 20,757; sheep, 14,294; poultry, 325,621. There were produced 23,384,208 gallons of milk. The total receipts for sale of dairy products was \$2,034,455. Valuation of all farm property is given as \$43,738,499, an increase of 41.8 per cent. since 1900.

The county is thoroughly equipped with lines of transportation. There are 277 district schools in the county besides the graded and high schools in the villages. These are all of the same high standing demanded by the state. Churches of all denominations are scattered throughout the county. There are forty agricultural organizations, thirty-six miles of state road and 1,896 miles of improved highway. The county ranks first in grapes, second in currants, and fourth in poultry.

TOWN OF ARKWRIGHT

Population 843

No. 96 — Farm of 87 acres, located $3\frac{1}{2}$ miles from Forestville P. O., R. D. 9, and 3 miles from railway station at Forestville, on line of Erie R. R.; $\frac{1}{2}$ mile from school and church; $3\frac{1}{2}$ miles from milk station. Highways, good but somewhat hilly. Nearest city, Dunkirk, 8 miles distant, population 17,221, reached by highway. Surface, slopes to east. Soil, good loam. Acres in meadow, 25; natural pasture, 15; timber, 30, hemlock, beech and maple; acres tillable, 40. Fruit, 2 acres of grapes, apples and currants. Best adapted to fruit. Fences in good condition. House, 9 rooms, stands on four corners, new roof, fair condition. Outbuildings, 2 barns, 30x40, in fair condition. Watered by well, cistern and two living streams. Occupied by tenant. This farm is in line of grape belt. Good market at Dunkirk and Fredonia. Gas well on farm across road. If gas is found on this farm the owner cannot sell for \$40 per acre. Price, \$40 per acre. Terms, half down, remainder on time. Will take \$2,000 if sold before March 1, 1913. Terms, $\frac{1}{2}$ down, remainder on time. Address Eunice G. Livermore, Forestville, N. Y.

No. 97 — Farm of 356 acres, located 6 miles from Cassadaga P. O., R. D. 31; 6 miles from railway station at Laona, on line of D. A. V. & P. R. R.; school across street; 2 miles from churches; 6 miles from milk station; butter factory across street. Highways, somewhat hilly but good. Nearest large village, Fredonia, population 5,285, 8 miles distant, reached by highway. Surface, hilly. Altitude, about 1,500 feet. Soil, loam clay. Acres in meadow, 100; in natural pasture, 80; in timber, 120, hemlock, maple and beech; acres tillable, 120. Fruit, 500 apple trees. Best

adapted to hay, oats, corn and potatoes. Fences, barbed wire, good condition. New house, 30x40. New barn, 40x60; old barn, 35x75; hogpen, 20x30; henhouse, 15x15, nearly new. Spring piped to trough, then to barn, over a dozen springs. Farm is 9 miles from Lake Erie. Occupied by tenant. Reason for selling, owner cannot attend to farm. Price, \$10,000. Terms, one-third cash. Address Rosie E. Pierce, care C. D. Sessions, Fredonia, N. Y.

TOWN OF CHARLOTTE

Population 1,258

No. 99 — Farm of 100 acres, located $4\frac{1}{2}$ miles from Sinclairville P. O., R. D. 40; 5 miles from railway station at Sinclairville, on line of D. A. V. & P. R. R.; $1\frac{1}{4}$ miles from school; 2 miles from Methodist church; $\frac{1}{3}$ mile from butter factory; 5 miles from milk station. Highways, good. Nearest city, Jamestown, population 31,297, 16 miles distant, reached by rail and highway. Surface, level. Soil, yellow loam, dark loam and gravel. Acres in meadow, 40; in natural pasture, 40; in timber, 20, maple; acres tillable, 80. Fruit, apples, pears, plums, cherries, currants, strawberries and raspberries. Best adapted to grass, oats, barley, corn, potatoes, cabbage, buckwheat and millet. Fences, woven wire. Good house, nearly new, 15 rooms. Outbuildings, new; cow barn, 42x60; horse barn, 30x40; henhouse, 16x50; storehouse, 20x28; sugar house; 3 sheepbarns, one, 12x38, one, 12x45, and one, 18x15. Watered by well and springs. This property is 14 miles from Chautauqua Lake. Occupied by owner. Reason for selling, advanced age of the owner. Price, \$6,000. Terms, \$4,000 cash, balance on mortgage. Address S. B. Irwin, Sinclairville, N. Y.

No. 100 — Farm of 126 acres, located $\frac{3}{4}$ mile from Cassadaga P. O.; $1\frac{1}{2}$ miles from railway station at Cassadaga, on line of Dunkirk & Pittsburg R. R.; 1 mile from school, church, butter factory and cheese factory; $1\frac{1}{2}$ miles from milk station. Altitude, about 700 feet. Surface of farm, quite smooth, slopes down toward east. Soil, loam. Acres in meadow, about 40; in natural pasture, about 40; in timber, about 20, mostly beech and maple, very little saw timber. Acres tillable, 80. Best adapted to potatoes, corn, oats, etc. Fences, wire, good condition. House, 8 rooms, good condition. Outbuildings, new cow barn, 30 stalls, cement floor, large hay barn and large horse barn. Watered, house and barns by well, fields by spring and small stream. This farm is 1 mile from Cassadaga Lake and Lily Dale Camp Grounds. Occupied by owner. Reason for selling, ill health of owner. A new State road runs $\frac{3}{4}$ of a mile from this farm. Price, \$35 per acre. Terms, one-half down. Address H. J. Putnam, Fredonia, N. Y.

*No. 101 — Farm of 100 acres, located 4 miles from Cassadaga P. O., R. D. 32 and railway station, on line of D. A. V. & P. R. R.; 20 rods from school; 2 miles from church; $1\frac{1}{2}$ miles from butter factory and cheese factory; 4 miles from milk station. Highways, good. Surface of farm, slightly rolling. Altitude, about 1,900 feet. Soil, gravel loam. Acres in meadow, 25; in natural pasture, 50. Sugar bush. Acres tillable, 25. Fruit, 50 apple trees. Best adapted to oats, corn, potatoes and buckwheat. Good fences. House, 11 rooms, good condition. Two barns, good condition. Watered, house and barns by well, fields by brooks and springs. Occupied by owner. Reason for selling, owner has other business. Price, \$4,000. Terms, \$1,000 down, balance on reasonable terms. Address Eckstrom and Frank, agents, Jamestown, N. Y.

*No. 102 — Farm of $77\frac{1}{2}$ acres, located about 3 miles from Sinclairville P. O., R. D. 40 and railway station, on line of M. S. R. R.; 1 mile from school and butter factory; $2\frac{1}{2}$ miles from milk station. Nearest city, Jamestown, 16 miles distant, population about 32,000, reached by rail and highway. Surface of farm, gently rolling. Altitude, 1,200 feet. Soil, rich loam and gravel. Acres in meadow, 35; in natural pasture, 33; in

timber, 12. Acres tillable, 65. Fruit, apples and pears. Adapted to general farm crops. Fences in good condition. House, 8 rooms, good condition. Large barn in good condition. Watered by well and spring. Occupied by owner. Reason for selling, advanced age of owner. Price, \$3,500. Terms, \$1,500 down, balance on mortgage at 5 per cent. Stock, tools and crops included in this price. Address Eckstrom & Frank, agents, 13-14 Gokey Building, Jamestown, N. Y.

TOWN OF CHAUTAUQUA

Population 3,515

No. 103 — Farm of 47 acres, located $\frac{1}{2}$ mile from Mayville P. O.; 1 mile from railway station at Mayville, on line of Penn. R. R.; $\frac{1}{4}$ mile from school; $\frac{1}{2}$ mile from Presbyterian, Lutheran and Methodist churches; about 3 miles from butter factory; $\frac{1}{2}$ mile from milk station. Highways, good. Nearest large village, Mayville, population 1,122, reached by highway or trolley. Surface, rolling; easy grade; can all be worked. Soil, good. Acres in meadow, over 20; in natural pasture, about 20; in timber, about 7, beech, maple. Acres tillable, 30. Fruit, 50 apple trees, 150 grapevines (a good farm for grapes). Best adapted to hay and grain. Fences, wire and rail. House, $1\frac{1}{2}$ -story, 1-story wing; 12 rooms. Six buildings on farm: horsebarn, 22x30, in fair condition; cowbarn, large enough for 8 head of cattle; henhouse, $1\frac{1}{2}$ stories; hall, 24x40, 2 stories; building, $1\frac{1}{2}$ stories. House watered by pump in kitchen; barns from house. One mile from Chautauqua Lake. Highways on two sides of farm, trolley car on highway in front of house. Occupied by tenant. Reason for selling, owner has other business. Price, \$4,000. Terms, whole or half cash, balance on mortgage. Will rent for cash. Name and address of owner, M. F. Jacobsen, 501 East 6th Street, Jamestown, N. Y.

No. 104 — Farm of 101 acres, 1 mile from Hartfield P. O. and railway station, R. D. 27. Soil, clay loam. Acres in meadow, 35; acres pasture, 41; acres timber, 25. House, 11 rooms, needs some repairing. Haybarn, 30x40. Cow and horse stable adjoining; also shop and poultry house. Watered by well and springs. Fences, wire and rail, in fair

* Farm is in hands of agent or real estate dealer.

condition. This farm has a fine sugar bush and a quantity of sawing timber. Price, \$35 per acre. Terms, one-third down, balance on time. This price includes farming tools and all the crops on the farm. Name and address of owner, W. S. Scriven, Mayville, N. Y.

No. 105—Farm of 133 acres, 2 miles from Hartfield P. O., R. D. 44, and from railway station at Hartfield on line of Chautauqua Lake R. R.; $\frac{1}{2}$ mile from school; 2 miles from Union, Christian and Episcopal churches; 1 mile from cheese factory. Highways, good, but hilly. Nearest village, Mayville, population 1,122 distant 4 miles, reached by highways. Surface, pastures hilly, meadows level and rolling. Soil, black loam. Acres in meadow, 45; in natural pasture, about 55; in timber, 30 to 40, beech, maple, ash, basswood and cherry. Acres tillable, about 100. Fruit, a large number of apple trees, choice varieties, a few fine pear trees, few peaches and other fruit. Best adapted to grass, corn, oats, etc. Fences, a few rail, the rest wire, in fair condition. House, upright, 32x25; wing, 18x50. Outbuildings: barn, 40x50; stable, 40x50; horsebarn, 25x30; cornbarn, 20x20; all in good condition. Watered, house by well; barns and fields by spring and streams. Chautauqua Lake, 2 miles away. This farm is well watered, lying in a sheltered location with excellent timber and buildings in good condition. Occupied by owner. Reason for selling, this property is owned and occupied by a widow and her daughter who cannot conduct farm. Price, \$35 per acre. Terms, one-half cash, balance on mortgage. Address M. L. Mallery, Hartfield, N. Y.

No. 106—Farm of 140 acres, located 2 miles from Sherman P. O.; $1\frac{1}{2}$ miles from railway station at Sherman, on line of Penn. R. R.; $\frac{1}{2}$ mile from school; 2 miles from Presbyterian, Baptist, Methodist and Universalist churches; $1\frac{1}{2}$ miles from butter factory and powdered milk factory; 2 miles from condensing plant. Highways, part hilly, but good. Nearest city, Jamestown, population 31,297, 20 miles distant, reached by rail or highway. Surface, rolling. Soil, good. Acres in meadow, 45; in natural pasture, 85; in timber, 8, hemlock, cherry, ash, beech and maple; acres tillable, 100. Fruit, 40 apple and 3 pear trees. Best adapted

to grass, oats, corn, buckwheat. Fences, wire and rail, in good condition. House, upright, 24x32, $1\frac{1}{2}$ -story wing, 18x32, in fair condition. Cowbarn, 50x70, remodeled 2 years ago, basement with cement floor, swing stanchions for 24 head of stock, water basins; additions on cowbarn, 15x60 and 22x40; horsebarn, 24x40, leanto 12x40, in fair condition. House, watered by drilled well; barns, by drilled well pumped by windmill; fields, by stream and springs. Eight miles from Chautauqua Lake. A good dairy farm; keeps 20 cows and a team. Joining property a tract of timber of 33 acres which owner would sell. Occupied by owner. Reason for selling, advanced age of owner. Price, \$4,500. Terms, \$2,000 cash, balance on bond and mortgage at 5 per cent. Address C. M. Myrick, Sherman, N. Y.

No. 107—Farm of 183 acres, located 2 miles from Mayville P. O., R. D. 22 and railway station, on line of Penn. R. R.; 2 miles from school, Catholic and Protestant churches. Highways, good. Nearest cities, Dunkirk and Jamestown, 22 and 25 miles distant, reached by rail and highway. Surface of farm, general southwest slope. Altitude, about 2,000 feet. Soil, loam. Acres in meadow, 40; in natural pasture, 40; in timber, 40, principally second growth. Acres tillable, 100. Best adapted to general farming. Fences in fair condition. Large house, rebuilt last year. Outbuildings, large barn, room for 40 cows, needs repairs. Watered, house and barn by well; fields by never-failing springs. This farm is 6 miles from Lake Erie. Reason for selling, to close an estate. Price, \$50 per acre. Terms, reasonable to good parties. Owner will rent with option to buy. Address W. D. Parker, Mayville, N. Y.

TOWN OF CLYMER

Population 1,164

*No. 108—Farm of 50 acres, located $2\frac{1}{2}$ miles from North Clymer P. O., R. D. and railway station, on line of Penn. R. R.; $\frac{1}{2}$ mile from school; 2 miles from churches; 2 miles from creamery and cheese factory; 5 miles from milk station and milk condensing plant. Nearest city, Jamestown, 14 miles distant, population about 32,000, reached by rail and highway. Highways, hilly, but good. Surface of farm,

*Farm is in hands of agent or real estate dealer.

part rolling and part level. Altitude, about 1,300 feet. Soil, sandy loam and gravel. Acres in meadow, 25; in natural pasture, 18; in timber, 7. Acres tillable, 43. Fruit, 75 apple trees, young orchard of pears and plums coming into bearing this year, also strawberries. Adapted to general farming. Fences, wire, board and rail, fair condition. House, 11 rooms, brick, first-class condition. Outbuildings, barn, 36x45; poultry house, 18x60; hoghouse, 16x20, all in good condition. Watered, house by well; barns by springs and well; fields by mineral spring. Occupied by owner. Reason for selling, ill health of owner. Address Eckstrom & Frank, agents, 13-14 Gokey Building, Jamestown, N. Y.

TOWN OF ELLERY

Population 1,695

No. 109 — Farm of 212 acres, $3\frac{1}{2}$ miles north from Bemus Point P. O., on line of Chautauqua Lake R. R.; $3\frac{1}{2}$ miles from station; 1 mile from school; $1\frac{1}{2}$ miles from Methodist church; R. D. 67, from Bemus Point. Roads to railroad station, school, etc., good. Nearest village, Bemus Point, population 500, reached by highway, $\frac{1}{2}$ mile distant. Occupied by tenant. Surface, rolling, part level. Soil, loam. Acres in meadow, 50; in natural pasture, 132; in timber, 30, mostly maple and beech, some hemlock; acres tillable, 150. Fruit, over 100 apple trees of various kinds, some pear trees. Best adapted to hay, oats, corn and potatoes. Fences, wire, in fair condition. House, 30x30, with ell, fair condition. Two barns in fair condition, one 30x60, one 40x84; cowhouse, 20x30; new silo. House watered by drilled well; barns by drilled well. Two miles from Chautauqua Lake. This is said to be one of the best dairy farms in the county. Six hundred sugar trees and evaporators. Reason for selling, owner has business in Akeley, Pa. Price, \$7,500. Terms, \$2,000 down. Price includes 20 dairy cows, bull and farming tools. Owner will rent. Name and address of owner, E. S. Clark, Akeley, Pa.

No. 110 — Farm of 70 acres, located $1\frac{1}{2}$ miles from Bemus Point P. O., R. D. 59; $1\frac{1}{2}$ miles from railway station at Bemus Point, on line of J. C. L. E. R. R.; $1\frac{1}{2}$ miles from school,

churches and cheese factory. Highways, good, smooth roads. Jamestown, population about 32,000, 9 miles distant, reached by rail and highway. Surface, rolling. Soil, gravel and black loam. Acres in meadow, 35; in timber, 20, chestnut, soft maple, hemlock, cucumber, ash and beech; acres tillable, 50. Fruit, 3 acres of apples, mostly all winter variety, cherry, plum, pear and peach trees. Best adapted to oats, corn, wheat and grass. Fences, wire, mostly in good condition. House, 10 rooms, old fashioned, needs repairs. Horsebarn, 30x36; haybarn, 32x40, needs some repairs; cornbarns and henhouses, in good condition. House watered by well and cistern; barns, close to brook; fields watered by small brook. One-fourth mile from Chautauqua Lake. One of the best farms in the county, good rich soil, easy to work and convenient in every way. Occupied by owner. Reason for selling, poor health of owner and other occupation. Price, \$4,500. Terms, mortgage \$2,000, balance in money. Name and address of owner, Mrs. Mary E. Tefft, 85 Newton Avenue, Jamestown, N. Y.

*No. 111 — Farm of 97 acres, located 4 miles from Jamestown P. O., R. D. 25; $\frac{1}{2}$ mile from railway station at Fluvanna, on line of C. & L. E. R. R.; $\frac{1}{4}$ mile from school; $\frac{1}{2}$ mile from Methodist church. Highways good. Nearest large city, Jamestown, 4 miles distant, population, about 32,000, reached by highway. Surface of farm gently rolling. Altitude about 1,200 feet. Soil, sandy loam and gravel. Acres in meadow, 42; in natural pasture, 40; in timber, 15. Acres tillable, 82. Fruit, apples and pears for family use. Best adapted to corn, potatoes, vegetables, oats, etc. Fences, wire, good condition. Two dwelling houses, good condition. Outbuildings, 3 barns, large and in first-class condition. Watered by well and spring. Chautauqua Lake $\frac{1}{2}$ mile from farm. Occupied by tenant. Reason for selling, owner desires to move to city. Price, \$100 per acre. Terms, reasonable amount down, balance on mortgage at 6%. Address Eckstrom and Frank, agents, 13-14 Gokey Bldg., Jamestown, N. Y.

TOWN OF ELLICOTT

Population 4,371

No. 112 — Farm of 75 acres, $2\frac{1}{2}$ miles

* Farm is in hands of agent or real estate dealer.

from Jamestown P. O., on line of Erie R. R.; $2\frac{1}{2}$ miles from station; $\frac{1}{4}$ mile (all denominations); R. D. 76, Jamestown. Good roads. Nearest city, Jamestown, population about 32,000, reached by highway and street car in southerly direction. Unoccupied. Surface, rolling slightly and level. Soil, loam, slightly sandy. Acres in meadow, 50; in natural pasture, 10; in timber, 5; acres tillable, 65. Fruit, 6 apple trees. Best adapted to corn, wheat, oats and hay. Fences, 50 acres surrounded by wire fence. House, old, 2 stories, in poor condition. Small old barn in poor condition. House watered by good spring; fields, by good springs, never dry. $2\frac{1}{2}$ miles from Chautauqua Lake; $\frac{1}{2}$ mile from Cassadaga Creek. Many farmers in this neighborhood have paid for farms by raising strawberries and other garden truck and selling in the city. Reason for selling, owner is not a farmer; also has another farm in same place. Price, \$50 to \$60 an acre. Terms to suit purchaser; prefer small payment. Name and address of owner, R. N. Blanchard, M. D., Jamestown, N. Y.

*No. 113 — Farm of 102 acres, located $2\frac{1}{2}$ miles from post-office and railway station at Jamestown, on line of Erie R. R.; $\frac{1}{4}$ mile from school; $2\frac{1}{2}$ miles from Catholic and Protestant churches; $2\frac{1}{2}$ miles from butter factory and milk station. Highways in fair condition. Nearest city, Jamestown, $2\frac{1}{2}$ miles, reached by highway, population about 32,000. Soil, clay sub-soil, rolling to east and west. Acres in meadow, 25; in natural pasture, 10; in timber 4, fuel only. Acres tillable, 60. Fruit, 100 apple, 60 plum, 40 pear and 20 cherry trees. Best adapted to grain and potatoes. Fences, wire, fair condition. House, 8 rooms, also house containing 6 rooms. The necessary barns, sheds, etc. Watered, house and barn by well, fields by spring. Occupied by owner. Reason for selling, advanced age of owner. This farm is one mile from Chautauqua Lake. Price, \$7,100. Terms, \$2,000 cash, balance on mortgage at 5%. Address W. J. Gilberts, agent, Gokey Bldg., Jamestown, N. Y.

TOWN OF ELLINGTON

Population 1,235

No. 114 — Farm of 129 acres, 2 miles from Ellington P. O.; $2\frac{1}{2}$ miles from Kennedy station and R. D. 120 acres

meadow and pasture; 9 acres timber. A good dairy farm and said to be very cheap at price asked. Watered by springs and artesian well. Fences, in good condition. House, 18x36, wing, 18x20, in good condition. Barns, 26x46 and 30x40, basement stable and cement floor, in good condition. Will rent for cash or on shares. Price, \$35 per acre. Terms easy. Address G. G. Gilbert, Ellington, N. Y.

TOWN OF FRENCH CREEK

Population 882

No. 115 — Farm of 209 acres, located 7 miles from Clymer P. O., R. D. 58; $8\frac{1}{2}$ miles from railway station at Clymer, on line of Penn. R. R.; $\frac{3}{4}$ mile from school; $3\frac{1}{2}$ miles from Methodist and Presbyterian churches; $3\frac{1}{2}$ miles from milk station. Highways, good. Soil, gravel and loam. Acres in meadow, 40; in natural pasture, 84; timber, 70, hemlock, elm, maple, basswood and beech; acres tillable, all except woodland. Fruit, apples and pears. Best adapted to grass, corn, oats, barley, buckwheat and potatoes. Fences, board, rail and wire. House, 28x32, with ell, 16x24, good condition. Outbuildings: barn, 50x59, basement, with stable for 36 head cattle, fair condition; horse barn, 30x40; hoghouse and henhouse. Watered by well, brook and spring. French Creek on north of farm. Occupied by owner and tenant. Reason for selling, advanced age of owner. Price, \$7,000. Terms easy. Address C. W. Kennedy, Clymer, N. Y., R. D. 58.

TOWN OF GERRY

Population 1,155

No. 116 — Farm of 231 acres, located 3 miles from Sinclairville P. O., R. D. 39; 3 miles from railway station at Sinclairville, on line of Dunkirk R. R.; $1\frac{1}{4}$ miles from school; 3 miles from churches (Baptist, Congregational and Episcopal); $1\frac{1}{2}$ miles from cheese factory. Highways, good, slightly hilly. Nearest village, Sinclairville, population 542, 3 miles distant, reached by highway. Surface, level or slightly rolling. Soil, part gravel and part clay loam. Acres in meadow, 30; in natural pasture, 80 or 90; in timber, 75, hemlock and hard wood; acres tillable, 80. Fruit, about 50 apple trees and 50 grapevines. Best adapted to grass and potatoes. Fences,

* Farm is in hands of agent or real estate dealer.

rail and wire, in fair condition. House, 18x26, wing, 20x30, with woodhouse, 16x16. Cow barn, 35x60, with stable for 20 cows; horse barn, 30x40, with henhouse attached, 15x30, in fair condition; hogpen and granary, 18x26. A sugar bush of 200 trees, with buckets, storing and gathering vat. A wagon with two sets of wheels, one common and one 6-inch tire, mowing machine, horse rake, bobs, cultivator and other farming tools, 15 tons of hay which can go with the farm. A man can sell \$2,000 worth of timber and wood and have sufficient left for own use. House needs some repairing. House watered by well; barn, by well; fields, by springs and brooks. About 10 miles from Chautauqua Lake. Occupied by tenant. Reason for selling, old age and ill health of owner. Price, \$25 per acre. Terms, 1/3 down, balance on time. Name and address of owner, M. Montague, Sinclairville, N. Y. Owner will rent.

TOWN OF HANOVER

Population 5,670

*No. 117 — Farm of 28 acres, located $\frac{3}{4}$ mile from Forestville P. O., R. D. 8; 1 mile from railway station at Forestville, on line of N. Y. & Erie R. R.; $\frac{1}{2}$ mile from school, Catholic and Protestant churches; $\frac{1}{4}$ mile from milk station; 1 mile from milk condensing plant. Highways good, mostly level. Nearest city, Dunkirk, 9 miles distant, reached by rail and highway. Surface of farm part level and part rolling. Altitude about 800 feet. Soil, loam and gravel. Acres in meadow, 10; in natural pasture, 10. Acres tillable, 26. Fruit, 1 acre of apples, 40 trees, $4\frac{1}{2}$ acres of grapes, also strawberries, red and black raspberries. Best adapted to hay, oats, buckwheat, corn, wheat and fruit. Fences, wire, good condition. House, 7 rooms, good size, fair condition. Outbuildings, one basement barn 30x40, 2 henhouses and hoghouse, fair condition. Watered, house and barns by well, fields by springs and brook. Occupied by tenant. Reason for selling, owner has other business. Price, \$2,800. Terms, \$1,400 down, balance on bond and mortgage. Address Ora C. Gage, Forestville, N. Y.

TOWN OF HARMONY

Population 2,847

No. 118 — Farm of 112 acres, located at Panama, R. D. 61; $4\frac{1}{2}$ miles from

railway station at Bear Lake, on line of Erie & Pennsylvania R. R.; $1\frac{1}{2}$ miles from school and churches; 1 mile from milk station. Highways, slightly hilly or rolling. Nearest village, about $1\frac{1}{2}$ miles, has a population of about 400. Fifteen miles to Jamestown, trolley part way. Surface, rolling. Soil, some clay and loam. Acres in meadow, 30; in natural pasture, 60 to 70; in timber, 15 to 20, hemlock, beech and maple; acres tillable, 30. Fruit, about 50 apple trees, greenings, twenty-ounce, baldwins and others. Best adapted to grain and dairying. Fences, rail and wire. Telephone passes house. House, upright, 18x26; ell, 43 feet. Large barn, 44x30; stable 17 feet wide and 40 feet long; horse barn, 24x36, with addition, 14x36; small haybarn, hen and hoghouse, 16x30. House watered by good well. Chautauqua Lake, 8 miles distant. Occupied by tenant. Reason for selling, old age and illness of owner. Owner will sell farming and sugar tools with farm if purchaser desires. Price, \$2,500. Terms, \$500 cash, balance in yearly payments. Owner will rent. Name and address of owner, H. B. Cook, Panama, Chautauqua Co., N. Y.

No. 119 — Farm of $153\frac{1}{2}$ acres, located 4 miles from Clymer P. O., R. D. 61; 4 miles from railway station at Panama, on line of Penn. R. R., also 5 miles from Bear Lake on Erie; 1 mile from school; $1\frac{1}{2}$ miles from Free Baptist; $3\frac{1}{2}$ miles from Methodist and Reg. Baptist churches; $3\frac{1}{2}$ miles from butter factory; $3\frac{1}{2}$ miles from cheese factory; 4 miles from milk station; 10 miles from condensing plant. Highways, good. Nearest village, Panama, population 337, $3\frac{1}{2}$ miles distant, reached by highway. Surface features of farm, part rolling, $\frac{2}{3}$ level. Soil, loam and gravel. Acres in meadow, 30; in natural pasture, 70; in timber, 30, beech, maple, ash, hemlock and basswood; acres tillable, 70. Fruit, 125 apple trees. Best adapted to grass. Fences, rail and wire, in good condition. House, 32x28, in good condition. Barn, 62x47; barn, 60x40; hogpen, 16x24; henhouse, 16x12; milkhouse, 12x18; shop, 16x24; woodhouse, 16x24. House watered by spring; barns, by creek, and fields, by creek. 12 miles from Lake Chautauqua. Occupied by tenant. Reason for selling, owner too old to work the farm. Price, \$3,500. Terms, \$1,000 cash, mortgage for balance at 4%, with

* Farm is in hands of agent or real estate dealer.

yearly payments. Owner will rent for cash or with option to buy. Name and address of owner, John Emory, Panama, N. Y.

No. 120—Farm of 113 $\frac{1}{4}$ acres, located 4 miles from Ashville P. O., R. D. 65; 4 miles from railway station at Ashville, on line of Erie R. R.; school on farm; 2 miles from Methodist and Baptist churches; 1 $\frac{3}{4}$ miles from butter factory; 4 miles from milk station. Highways, good. Nearest city, Jamestown, population about 32,000, 11 $\frac{1}{4}$ miles distant, reached by rail, trolley or highway. Surface of farm, part level, part rolling. Soil, gravel loam. Acres in meadow, 40; in natural pasture, 50; in timber, 29, maple, beech, hemlock and pine; acres tillable, 60. Fruit, 188 apple, 2 prune, 4 plum, 4 pear and 2 cherry trees, 12 grapevines; also small fruits. Best adapted to corn, oats, wheat and grass. Fences, board, rail and wire, in good condition. House, 12 rooms, in good condition. Barn, 40x48, clapboarded and painted; barn, 36x86, with basement; tool barn; 2 henhouses; 3 silos; milk room with cement floor, all in good condition. Watered, house, by well; barns, running water from well to cement trough in barnyard; fields by trout brook. 4 miles from Chautauqua Lake. This farm is located 2 miles from high school. Sugar bush. Occupied by owner. Reason for selling, advanced age of owner. Price, \$50 per acre. Terms $\frac{1}{2}$ down, the balance on time. Address B. W. Lewis, Ashville, N. Y.

No. 121—Farm of 75 acres, located 8 miles from Ashville P. O., R. D. 63; 8 miles from railway station at Ashville, on line of Erie railway, $\frac{3}{4}$ mile from school and Methodist church, 1 $\frac{1}{2}$ miles from milk station, 8 miles from milk condensing plant. Highways somewhat rolling. Surface of farm level. Soil, loam. Acres in meadow, 20; in natural pasture, 20; in timber, 35; beech, basswood and hemlock. Acres tillable, 20. Fruit, apples, pears, plums. Best adapted to grass, corn, and grain. Fences, mostly wire good condition. House, 26x26, with ell 20x25. Outbuildings, one barn 28x46, granary, 16x24, 2 hen houses, 16x40, hog pen, 12x16. Watered, house by well and cistern, barns by running spring, fields by springs. This farm is 3 miles from Chautauqua Lake. Occupied by owner. Reason for selling, owner is a woman and cannot look after property. Price, \$3,800. Terms, $\frac{1}{2}$ cash, balance on

bond and mortgage. Address Mrs. C. C. Hawley, 40 Academy street, Westfield, N. Y. Owner will rent on shares or for cash.

No. 122—Farm of 320 acres, located 7 miles from Ashville P. O., R. D. 64; 5 miles from railway station at Chautauqua, on line of J. C. & L. E. R. R.; 1 mile from school, $\frac{3}{4}$ mile from Methodist church, 2 miles to other churches, 3 miles from milk station, 6 $\frac{1}{2}$ miles from milk condensing plant and powdered milk factory. Highways, somewhat hilly but good. Nearest city, Jamestown, 12 miles distant, population about 32,000, reached by trolley and highway. Surface of farm slightly rolling. Altitude about 1,500 ft. Soil, loam and gravel, clay sub-soil. Acres in meadow, 40; in natural pasture, 50; in timber, 70, mostly beech and maple. Acres tillable, 200. Fruit, 250 apple trees, 3 pear trees and 2 plum trees. Best adapted to hay, grain, wheat, oats and buckwheat. Fences, mostly wire, some rail, fair condition. House, 10 rooms, needs slight repairs. Outbuildings, barn 60x30, wing, 48x50, two other barns 30x40, fair condition, shop, 18x30, good condition, four smaller buildings. Watered, house and barn by well, fields by living springs. This farm is 3 miles from Lake Chautauqua. Occupied by owner. Reason for selling, ill health of owner. Price, \$25 per acre. Terms, cash or part cash. Address R. M. Hutchinson, Ashville, N. Y., R. D. 64. Owner will rent with option to buy.

TOWN OF Kiantone

Population 520

No. 123—Farm of 15 acres, located 5 miles from Jamestown P. O., R. D. 82; 4 miles from railway station at Frewsburg, on line of D. A. V. & P. R. R.; $\frac{1}{4}$ miles from school; $\frac{1}{10}$ mile from Congregational church; 3 miles from butter factory; 3 miles from milk station; 3 miles from condensing plant. Highways, good. Nearest city, Jamestown, population about 32,000, 5 miles distant, reached by highway. Surface of farm, level with eastern slope. Altitude, 1,492 feet. Acres in meadow, 5; in natural pasture, 2; in timber, 3, beech, maple, basswood and ash; acres tillable, 10. Fruit, 56 apple, 40 plum, 6 prune, 15 pear, 12 cherry, 2 quince, and several peach trees, also small fruits. Adapted to all crops that grow in this climate. Fences, wire, in good condition. House, 10 rooms, in good condition. Barn,

20x41; 3 henhouses; hogpen; all in good condition. Watered, house and barn by well; fields by springs. 3 miles from Conewango River. Fine view of the foothills of the Allegheny Mountains and the Conewango Valley. Occupied by owner. Reason for selling, owner has other business. Price, \$2,000. Terms, $\frac{1}{2}$ cash, balance on easy payments. Address Melvin C. Wright, Jamestown, N. Y., R. D. 82.

TOWN OF POLAND

Population 1,447

No. 124 — Farm of 223 $\frac{1}{2}$ acres, located 4 miles from Frewsburg P. O., R. D. 84; 3 $\frac{1}{2}$ miles from railway station at Falconer Junction, on line of Erie & D. A. V. & P. R. R.; 80 rods from school; 3 miles from churches; 4 miles from butter factory; 3 miles from milk station; 4 miles from condensing plant. Highways, good. Nearest city, Jamestown, population about 32,000, distant 6 miles, reached by highway and trolley. Surface of farm, meadows and upland. Soil, excellent. Acres in meadow, 100; in natural pasture, 123; acres tillable, 100. Fruit, 30 trees. Adapted to almost all kinds of crops. Fences, wire and stumps. Houses, 2, in fair condition. Barns, 4 barns and outbuildings. Watered, house, by pipes from spring; barns, by pipes from springs, and fields by creek. Chautauqua Lake, 7 miles from farm. Conewango creek runs through meadows. Occupied by tenant. Tenant's lease includes agreement of release in case of sale of farm. Reason for selling, owner living at a distance too great to look after the farm personally. Price, \$10,000. Terms, part cash, balance on mortgage if desired. Owner will rent. Terms to be agreed upon. Address A. D. Betts, Downing Avenue, Newburgh, N. Y.

No. 125 — Farm of 105 acres, located $\frac{3}{4}$ mile from Kennedy P. O., R. D. 72 and railway station, on line of Erie R. R.; $\frac{3}{4}$ mile from school and Protestant churches; 2 miles from butter factory; $\frac{3}{4}$ mile from cheese factory and milk station; 7 $\frac{3}{4}$ miles from milk condensing plant. Nearest city, Jamestown, population about 32,000, 9 miles distant, reached by rail and state road. Surface of farm, rolling. Good soil. Acres in meadow, 50; in natural pasture, 55; in timber, 1. Acres tillable, 100. Fruit, 75 apple, 2 cherry, 5 pear and 3 plum trees, also 10 current bushes. Adapted to any

crop grown in this climate. Fences, wire, good. House, 9 rooms, good condition. Outbuildings, barn 30x65 with wing 35x38; shed, 14x38, good condition; henhouse, 10x18; hen and hoghouse, 16x50. Watered, house and barn, by well; fields by spring. This farm is 9 miles from Chautauqua Lake. Occupied by tenant. Reason for selling, ill health of owner. Price, \$4,000. Terms to suit purchaser. Address Anderson Gilbert, Kennedy, N. Y. Owner will rent on shares.

TOWN OF POMFRET

Population 7,309

*No. 126 — Farm of 101 acres, located 4 miles from Fredonia P. O., R. D. 16; 4 miles from railway station at Fredonia; $\frac{1}{2}$ mile from trolley; $\frac{1}{2}$ mile from school; 4 miles from churches. Highways, first-class, level. Nearest village, Fredonia, population 5,285, 4 miles distant, reached by trolley and highway. Surface, fairly level. Soil, gravel loam and clay. Acres in meadow, 12; in natural pasture, 4; in timber, 14, maple, beech, oak and chestnut; acres tillable, 80. 50 apple, 50 peach, 10 pear trees, about 40 acres vineyard, bearing. Best adapted to corn, oats, wheat and fruit. Fences, wire, in good condition. House, 36x48, 2 stories and attic, good condition. Buildings cost more than \$7,000. Watered, house and barn, by wells; fields, by spring and brook. Lake Erie 2 $\frac{1}{2}$ miles distant. Fine view of the lake and country. Occupied by owner. Reason for selling, old age of owner and other interests to care for. Price, \$170 per acre. Terms, $\frac{1}{3}$ or more down. Address H. J. Putnam, agent, Fredonia, Chautauqua Co., N. Y.

*No. 127 — Farm of 83 acres, located 3 miles from Fredonia P. O., R. D. 16, and railway station, on line of D. A. V. & P. R. R.; $\frac{1}{8}$ mile from school; 3 miles from Catholic and Protestant churches; 3 miles from cheese factory. Highways in first-class condition. Nearest large village, Fredonia. Surface of farm, rolling. Soil, gravel and clay. Acres in meadow, 14; in natural pasture, 15; in timber, 1, maple and beech. Acres tillable, 70. Fruit, 6 acres of grapes, 50 apple, 20 peach, 12 pear, 10 cherry and 6 plum trees. Best adapted to fruit and grain. Fences, wire and rail, good condition. House, 10 rooms, good condition. Outbuildings, 4 barns, one 30x54; one

* Farm is in hands of agent or real estate dealer.

22x40, one 16x30 and one 20x40, all in good condition. Watered, house and barns by well; fields by creek. This farm is 4 miles from Lake Erie and 15 miles from Chautauqua Lake. Occupied by owner. Reason for selling, owner wishes to retire from business. Price, \$7,000. Terms, \$2,500 down, balance on mortgage. Address S. Ray Fairbanks, agent, Fredonia, N. Y.

No. 128 — Farm of 90 acres, located 3 miles from Stockton P. O.; 4 miles from railway station at Brocton, on line of Lake Shore Railway; 1 mile from school; 3 miles from churches; butter factory and cheese factory; 4 miles from milk station. Highways, good, some hills. Surface of farm, quite smooth, slopes down to east. Altitude about 700 feet. Soil, loam. Acres in meadow, 25; in natural pasture, 30; in timber, 15, beech and maple, no saw timber. Acres tillable, about 30. Best adapted to potatoes, corn, oats, etc. Fences, wire. House, 7 rooms, needs paint and some other repairs. Outbuildings, large hay and cow barn and good size horse and wagon barn. Watered, house by well and spring; barns and fields by spring. This farm is one mile from Bear Lake. Occupied by owner. Reason for selling, owner wants to go with relatives. Price, \$3,000. Terms, \$2,000 down. Address H. J. Putnam, Fredonia, N. Y.

TOWN OF PORTLAND

Population 3,058

No. 128 $\frac{1}{2}$ —Farm of 30 acres; located 1 $\frac{1}{4}$ miles from Brocton P. O. and shipping station on line of P. & E. R. R.; 1 $\frac{1}{4}$ miles from school and Protestant churches. Highways, level, well graded roads. Nearest large villages, Brocton, population 2,000, and Dunkirk, 9 miles, population 17,000, reached by railroad and trolley. Surface of farm, level. Soil, gravel loam. Acres in meadow, 7. All tillable. Fruit, 15 acres of grapes. Adapted to fruits or general farm crops. House, 7 rooms, good condition. Basement barn, 26x36, new roof, cement floor, good condition. Watered, by well. This farm is 2 miles from Lake Erie. Unoccupied. Reason for selling, advanced age of owner. This farm lies on both sides of the road, has fine maple drive the entire length. The trees are large and beautiful, 140 of them, can be tapped and syrup made for family use. Price, \$6,000. Terms, part cash, balance on

easy terms. Address Wm. Walden, Brocton, N. Y.

TOWN OF SHERIDAN

Population 1,888

*No. 129 — Farm of 151 acres, located 1 mile from Forestville P. O.; 1 $\frac{1}{2}$ miles from Forestville and Sheridan railway stations, on line of N. Y. & Erie R. R.; 1 mile from school, Protestant and Catholic churches; 1 $\frac{1}{2}$ miles from milk station and milk condensing plant. Highways, somewhat hilly but good. Nearest city, Dunkirk, 7 miles distant, reached by rail and highway. Surface of farm, mostly level. Altitude, about 800 feet. Soil, clay loam. Acres in meadow, 10; in natural pasture, 30; in timber, 10, chestnut, maple and beech, second growth. Acres tillable, 101. Fruit, 50 apple, 45 acres bearing grapes, 4 acres of black raspberries. Best adapted to hay, oats, corn and fruit. Fences, rail and wire, fair condition. House, 9 rooms, large, good condition. Outbuildings, 1 barn, 40x80; hog pen and milk house, all in fair condition. Watered, house by well; barns, by well and spring; fields by small creek and springs. This farm is 5 miles from Lake Erie. Occupied by owners. Reason for selling, to close an estate. Price, \$80 per acre. Terms, \$8,400 down, balance on long time. Address Ora C. Gage, agent, Forestville, N. Y.

TOWN OF SHERMAN

Population 1,568

No. 130 — Farm of 138 $\frac{1}{2}$ acres, located 4 $\frac{1}{2}$ miles from North Clymer P. O., R. D. 60; 4 $\frac{1}{2}$ miles from railway station at Sherman and North Clymer, on line of Penn. R. R.; $\frac{1}{2}$ mile from school; $\frac{1}{2}$ mile from Baptist church; 4 $\frac{1}{2}$ miles from condensing plant; $\frac{1}{2}$ mile from milk station. Highways, slightly hilly, but very good. Nearest city, Jamestown, population about 32,000, distant 18 miles, reached by highway and rail. Surface of farm, meadows, level, slightly rolling. Soil, gravel loam. Acres in meadow, 40 to 45; in natural pasture, 45 to 50; balance in timber, maple, beech, hemlock; acres tillable, 50 or more. Fruit, grapes, about 100 apple trees. Best adapted to corn, oats, buckwheat, potatoes, millet. Fences, rail and wire, in good condition. House, 10 rooms, very good condition. Barns, horse barn, 28x48; one 40x44, in

* Farm is in hands of agent or real estate dealer.

good condition. House watered by well; barns, by spring; fields, by good creek; 8 miles from Chautauqua Lake; 8 miles from Findley Lake. This farm is productive, in good condition, and well watered. Occupied by owner. Reason for selling, owner has other business. Price, \$3,600. Terms, some cash, balance on time to suit. Name and address of owner, C. E. Hill, North Clymer, N. Y.

No. 131—Farm of 155 acres, located 1 mile from North Clymer P. O., R. D. 61; 1 mile from railway at Panama station, on line of Penn. R. R.; $1\frac{1}{4}$ miles from churches; 1 mile from butter factory; $4\frac{3}{4}$ miles from Mohawk Milk Condensing Co. Highways, level. Nearest village, Sherman, population 836, about 5 miles distant, reached by railroad or highway. Surface of farm, descends to east and northwest, some level. Soil, loam, gravel. Acres in meadow, 30; in natural pasture, 40 or 50; in timber, 40 or 50, maple, beech, ash, elm, basswood and pine. Maple grove of about 500 trees. Acres tillable, about 100. Fruit, about 40 apple trees, few cherry trees. Best adapted to grass, potatoes, corn and general crops. Fences, rail and wire, in good condition. House, upright, 2 stories, ell, $1\frac{1}{2}$ stories, summer kitchen and woodhouse. One barn, 32x40; one, 26x32 with cow stable attached; one, 20x24; horse barn, 26x40, with good hoghouse attached; large henhouse, fair condition. House watered by well and spring; barns, by springs; fields, by creeks and springs. 9 miles from Chautauqua Lake; 10 miles from Findley Lake; 12 miles to famous Chautauqua summer resort. Occupied by tenant. Township free from debt, taxes low, school tax only \$3 to \$4 per year. The railroad through school district pays nearly $\frac{1}{2}$ school tax each year. State, county and town tax low. Reason for selling, advanced age and other business of owner. Price, \$3,250. Terms, \$1,000 or \$1,500 cash; 5% interest on balance. Name and address of owner, T. J. Newell, Lock Box 667, Sherman, N. Y.

*No. 132—Farm of $91\frac{1}{2}$ acres, $2\frac{1}{2}$ miles from Sherman P. O., R. D. 52; 2 miles from Sherman railway station, on the Penn. R. R.; $\frac{3}{4}$ mile from school; 2 miles from churches and butter factory. Highways, hilly. Nearest city, Jamestown, about 32,000 inhabitants, 25 miles distant by railway and traction line. Surface, rolling. Soil, good. Acres in

meadow, 30; natural pasture, 45; timber, 15, second growth; acres tillable, 70. Fruit, 60 apple trees. Best adapted to oats, millet, barley, orchard and small fruits. Fences, wire and rail. House, $1\frac{1}{2}$ story, with kitchen and woodhouse. Outbuildings: barn, 36x70, with basement. Watered, house and barn, by well; fields, by springs. Chautauqua Lake 8 miles distant. This farm keeps 14 cows and a team. Occupied by a tenant. Good and sufficient reasons for selling. Price, \$3,000. Terms, $\frac{1}{3}$ cash, balance on bond and mortgage. Address A. B. Sheldon, Sherman, N. Y.

*No. 133—Farm of 140 acres, located 2 miles from Sherman P. O., $1\frac{1}{2}$ miles from railway station at Sherman, on line of Penn. R. R.; school next to farm, 2 miles from Protestant churches, 3 miles from cheese factory, $1\frac{1}{2}$ miles from milk powder factory; 2 miles from milk condensing plant. Highways good. Eight miles from Chautauqua, a noted summer resort, reached by rail and highway. Surface of farm rolling. Altitude about 1,300 ft. Soil, gravel and sandy loam. Acres in meadow, 92; in natural pasture, 4; in timber, 7. Acres tillable, 133. Fruit, 5 trees, apples and pears. Best adapted to corn, potatoes and general crops. Fences, wire and rail, good condition. House, 8 rooms, fair condition. Outbuildings, one basement barn, cement floor, 50x70, leanto, 22x40, shed, 16x40, tool house, 20x40, shed, 16x40. Watered, house by well, barns by well and windmill, fields by springs. Occupied by owner. Reason for selling, advanced age of owner. Price, \$4,500. Terms, \$2,000 down, balance at 5%. Address Eckstrom and Frank, agents, 13-14 Gokey Bldg., Jamestown, N. Y.

TOWN OF STOCKTON

Population 1,781

No. 134—Farm of 273 acres, 3 miles from Stockton P. O., R. D. 27; 4 miles from Hartfield railway station. Soil mostly dark loam. Acres in meadow, 75; pasture, 163; timber, 25. House, 7 rooms and 5 bed rooms, needs a few repairs. 1 barn, 30x40, needs repairing. Watered by well and never-failing springs. Fences, wire and in fair condition. Price, \$42 per acre. Terms, owner will accept small payment down, balance on time or \$35 per acre cash; will also sell household furniture. This price in-

* Farm is in hands of agent or real estate dealer.

cludes 12 dairy cows, 1 team, farming tools, dairy and sugar tools, wagons, etc. The timber includes a fine sugar bush and a good many thousand feet of hemlock timber. Owner will rent to party who will buy stock, tools and household goods with option to buy. Name and address of owner, W. S. Scriven & Son, Mayville, N. Y.

TOWN OF WESTFIELD

Population 4,481

No. 135—Farm of 125 acres, located 4 miles from Westfield P. O., R. D. 22; 3 miles from railway station at Mayville, on line of Penn. R. R., 4 miles from railway station at Westfield, on line of Lake Shore R. R.; 3 miles from school, 4 miles from Catholic and Protestant churches. Highways in good condition. Nearest cities, Dunkirk, 20 miles distant and Jamestown, 24 miles distant, population about 32,000. Surface of farm rolling and hilly. Altitude about 1,500 ft. Soil, loam. Acres in meadow, 45; in natural pasture and timber, 45. Acres tillable, 35. Fruit, apples, berries and grapes. Adapted to all kinds of fruits. Fences in fair condition. No house. Ordinary bank barn. Watered, house and barns by wells, fields by springs. Lake Erie is 5 miles distant from farm. Occupied by owner. Reason for selling, advanced age of owner. Price, \$60 per acre. Terms, $\frac{1}{2}$ down. Address W. H. Richardson, Westfield, N. Y., R. D. 22.

No. 136—Farm of 77 acres, located $1\frac{1}{2}$ miles from Westfield P. O., R. D. 20 and railway station, on line of Lake Shore R. R., $1\frac{1}{2}$ miles from school and Protestant churches. Highways in good condition. Nearest city, Dunkirk, 17 miles distant, reached by rail and highway. Surface of farm level. Altitude about 1,100 ft. Soil, clay loam. Acres in meadow 8, all tillable. Fruit, 19 acres of grapes, 6 acres orchard, 40 acres in general farm land. Best adapted to fruit and berries. Old house, fair condition, slight repairs needed. Large and practically new barn with basement for 20 cattle. Watered by well. This farm borders on Lake Erie, good boating, bathing and fishing. Reason for selling, advanced age and ill health of owner. Price, \$250 per acre. Terms, $\frac{1}{2}$ down. Address Walter Persons, Westfield, N. Y., R. D. 20.

No. 137—Farm of 80 acres, located 4 miles from Westfield P. O., R. O. 20, 3 miles from railway station at Westfield

on line of L. S. Ry.; 3 miles from school, Catholic and Protestant churches. Highways good. Nearest city, Dunkirk, 17 miles distant, reached by rail and trolley. Surface of farm level on lake front. Altitude about 1,100 ft. Soil, clay loam. Acres in meadow 12, in natural pasture, 67; in timber about 25, second growth, hard wood. Acres tillable, about 50. Fruit, 33 acres of grapes, $1\frac{1}{2}$ acres of berries; all kinds of fruit for home use. Best adapted to fruit. House, 12 rooms, furnace. Outbuildings, new 30x40 barn, cement blocks, also other outbuildings. Watered, house and barn by well, fields by streams. This farm borders on Lake Erie. Occupied by owner. Reason for selling, ill health of owner. Price, \$12,000. Terms, safe payment down, balance on easy terms. Address E. W. Bacon, Westfield, N. Y., R. F. D. 20.

No. 138—Farm of 57 acres, located 3 miles from Westfield P. O., R. D. 24 and railway station, on line of L. S. Ry.; 3 miles from school, 3 miles from Protestant churches. Level State road. Nearest city, Dunkirk, 17 miles distant, population about 17,000, reached by rail and highway. Surface of farm level. Altitude about 1100 ft. Soil, gravel and clay loam. All tillable. Most of farm set to grapes. Best adapted to fruit. House, large, furnace, bath, natural gas, excellent condition; also tenant house in good condition. Outbuildings, large, practically new. Watered by wells. This farm is one mile from Lake Erie. Occupied by owner. Reason for selling, advanced age of owner. Price, \$350 per acre. Address C. E. Thomas, Westfield, N. Y., R. D. 24.

No. 139—Farm of 20 acres, located 1 mile from Westfield P. O., R. D. 21 and railway station at Westfield; on line of Lake Shore R. R.; 1 mile from churches, 1 mile from school. Level State road. Nearest city, Dunkirk, 17 miles distant, population about 17,000, reached by rail and water. Surface of farm level. Altitude 1,100 ft. Soil, sandy or clay loam. Acres in meadow, 3. All tillable. Fruit, 10 acres of grapes, $3\frac{1}{2}$ acres raspberries, 29 apple trees and 25 peach trees set last year besides old ones, plums, prunes, pears, currants and gooseberries. Adapted to fruits. Small house. Outbuildings, basement barn, large hen house, 16x40, two smaller hen houses, good packing house. Watered by well and running stream. This farm is one mile from Lake Erie. Reason for selling, owner

wants to buy a larger place. Price, \$7,500. Terms, \$2,500 cash, balance on easy terms, to suit purchaser. Address Wm. Wells, Westfield, N. Y., R. D. 21.

No. 140—Farm of 34 8/10 acres, located 3 miles from Westfield P. O., R. D. 24 and railway station; on line of Lake Shore Ry., 3 miles from school and churches. Level State road. Nearest city, Dunkirk, 17 miles distant, population about 17,000, reached by rail. Surface of farm level. Altitude about 1,100 ft. Soil, gravel loam. Acres in natural pasture, 4. All tillable. Fruit, 20 acres of grapes, 4 acres of raspberries, 500 cherry trees, 4 years old. Best adapted to fruit and berries. House in first-class condition, bath, furnace, well and cistern inside, oak finish in front rooms. Watered by well and cistern. Lake Erie is 1 mile from farm. Occupied by owner. Reason for selling, owner desires to engage in other business. For price and terms address W. C. Culberson, Westfield, N. Y., R. D. 24.

No. 141—Farm of 90 acres, located 4 miles from Westfield P. O., 3 miles from railway station at Ripley, on line Lake Shore Ry.; school next to farm, 3 miles from Catholic and Protestant churches. State road. Nearest city, Dunkirk, 22 miles distant, population about 17,000; reached by rail. Surface of farm level but well drained. Altitude about 1,100 ft. Soil, sandy and clay loam. Acres in meadow, 15; in natural pasture, 10. All tillable. Fruit, 50 acres grapes. Adapted to fruit and berries. House, large, poor condition but can be repaired. Outbuildings large but need some repairs. Watered by well. Lake Erie about 1/2 mile from house. Unoccupied. Reason for selling, owned by Welch Grape Juice Company and for sale because they have decided to do no more farming. Price, \$200 per acre. Terms, 1/2 cash. Address Welch Grape Juice Company, Westfield, N. Y.

No. 142—Farm of 174 acres, located 4 miles from Westfield P. O., R. D. 23 and railway station, on line of Lake Shore Ry.; 1/2 mile from school and church, 2 miles from butter factory. Highways somewhat hilly but good. Surface of farm part hilly and part rolling. Altitude about 2,000 ft. Soil, volusia loam. Acres in meadow, 35; in natural pasture, 100; in timber, 10, second growth, hard wood.

Acres tillable, 70. Fruit, 75 apple, 20 peach, 15 plum, prune and cherry trees, 1 acre of grapes, also strawberries. Adapted to general farming. Fences good. House, 12 rooms, built in 1900. Outbuildings, barn 30x40 with basement, barn 36x40, barn 24x26, barn 23x28; hog house, hen house and corn crib. Watered by well and stream. Lake Erie 5 miles from farm. Occupied by owner. Chautauqua Lake 5 miles from farm. Reason for selling, advanced age of owner. Price, \$22 per acre. Terms, 1/2 cash. Address C. L. Ostrander, Westfield, N. Y., R. D. 23.

No. 143—Farm of 60 acres, located 1 mile from Westfield P. O. and railway station, on line of Lake Shore Ry.; 1 mile from school. Highways in good condition. Nearest city, Dunkirk, 17 miles, population about 17,000, reached by rail. Surface of farm rolling. Altitude about 1,100 ft. Soil, gravel loam. All tillable. Fruit, 32 acres of grapes, 500 apple, 175 pear, 25 cherry, 60 plum and prune trees, also plenty of other fruits for home use. Best adapted for fruit. House, good, large. Outbuildings, large and good, also packing house and tool house. Watered by well and stream. This farm is 2 miles from Lake Erie. Occupied by owner. Reason for selling, advanced age and ill health of owner. Price, \$9,000. Terms, safe payment down. Address A. Anderson, Westfield, N. Y., R. D. 21.

No. 144—Farm of 24 acres, located 1 mile from Westfield P. O., R. D. 21 and railway station, on line of Lake Shore Ry.; 1 mile from school, Protestant and Catholic churches. Highways good. Nearest city, Dunkirk, 17 miles distant, population about 17,000, reached by rail. Surface of farm, slightly rolling. Altitude about 1,100 ft. Soil, gravel loam. Acres in meadow, 3; in natural pasture, 6. Acres tillable, 18. 16 acres of grapes. Best adapted for fruit. No house. Good packing house. Worked by owner. Reason for selling, owner desires to retire from business. Price, \$4,500. Terms, safe payment down, balance to suit purchaser. Address Hermon Kent, Westfield, N. Y.

*No. 145—Farm of 230 acres, located 3 miles from Westfield P. O., R. D. 21; 10 rods from Penn. railway station, 4 trains daily to Buffalo and Pittsburg,

* Farm is in hands of agent or real estate dealer.

1¼ miles from school, 1¾ miles from Protestant church, 4 miles from butter factory and cheese factory, 10 rods to milk station. Highways somewhat hilly but good. Nearest city, Dunkirk, 17 miles distant, population about 17,000 reached by rail; Surface of farm rolling. Altitude about 1,500 ft. Soil, gravel and sandy loam. Acres in meadow, 40; in natural pasture, 30; in timber 30, second growth hardwood. Acres tillable 175. Fruit, 16 acres of grapes, 500 winter pear trees, 10 apple, 20 cherry, 20 prune and plum trees. Adapted to all general farm crops, good alfalfa land: Fences in good condition. House, 12 rooms, steam heat, natural gas, good condition. Outbuildings, one barn, 40x90, with ell 20x50, 2 silos 12x25, large barn has basement, stanchions for 30 cows. Watered by springs. Lake Erie is 3 miles distant. Occupied by owner. Reason for selling, advanced age of owner. For price and terms address E. C. Delaplain, agent, 5 Welch Block, Westfield, N. Y.

No. 146—Farm of 164 acres, located 1¼ miles from Westfield P. O., R. D. 20 and railway station, on line of Lake Shore Ry.; 1¼ miles from school, Catholic and Protestant churches. Highways good. Surface of farm generally level. Altitude about 1,100 ft. Soil gravel and sandy loam. Acres in meadow, 35. Fruit, 50 acres in grapes, half of them less than 5 years old, 65 apple, 50 pear, 50 peach and 50 cherry trees, also other fruit and garden stuff for family use. Best adapted to fruit and berries, corn, oats, wheat, rye, grasses and alfalfa. Fences, pasture all fenced with good woven wire fence. House, 14 rooms, good repair, tenant house, 5 rooms, good repair. Outbuildings, barn 60x72, built 4 years, well painted, tool house, 22x50, 2 stories, excellent packing and storage house, poultry house, 16x50, good condition, corn house, ice house and other buildings, all in good condition. This farm is 1½ miles from Lake Erie. Occupied by owner. Reason for selling, ill health of owner. Price, \$150 per acre. Address G. W. Sawan, Westfield, N. Y., R. D. 20.

No. 147—Farm of 105 acres, located 2 miles from Westfield P. O., R. D. 24; 1¾ miles from railway station at Westfield, on line of Lake Shore Ry.; 2 miles from school and churches. Surface of farm slightly rolling. Altitude 550 ft. Soil, clay loam. Acres in meadow, 12; in natural pasture, 20; in timber, 12, mostly

small, hardwood. Acres tillable, 75. Fruit, about 125 apple trees, 25 acres of grapes, a few pear trees. Best adapted to fruit, corn, grass, oats, and wheat. Fences mostly rail and wire, poor condition. House, 22x32 with ell 18x24, woodshed, 12x20, fair condition. Outbuildings, barn, shed, packing house, 2 stories. Watered by well, creek and lake. This farm borders on Lake Erie. Occupied by tenant. Price \$200 per acre. Terms, cash or part cash. Address M. A. Wilson, Westfield, N. Y.

No. 148—Farm of 24 acres, located 1½ miles from Westfield P. O. and railway station, on line of Lake Shore Ry.; 1½ miles from school, Catholic and Protestant churches. Good roads. Surface of farm slightly rolling. Altitude about 1,100 ft. Soil, gravel loam. Acres tillable, 19. 16 acres of grapes. Best adapted to fruit. No house. A good packing house. Lake Erie is 2½ miles from farm. Unoccupied. Reason for selling, advanced age of owner. Price, \$4,500. Terms, \$1,000 down. Address, Hermon Kent, Westfield, N. Y.

No. 149—Farm of 25 acres, located in Westfield, on line of Lake Shore Ry. Surface of farm level. Altitude about 1,100 ft. Soil, gravel loam. 5 acres in meadow. All tillable. Fruit, 9 acres of grapes, 1½ acres of cherries, large tract of currants, red raspberries, pears, peaches, apples and strawberries. Best adapted to fruit and berries. House, modern, 14 rooms, electric and gas light, bath, furnace and all conveniences, 3 minutes walk from trolley. Outbuildings, good barn, electric lights, also cow barn, hen house, etc. Watered, house and barn by city water. Lake Erie one mile distant. Occupied by owner. Reason for selling, advanced age and ill health of owner. Price, \$17,000. Address A. H. Harris, Westfield, N. Y.

No. 150—Farm of 40 acres, located 1 mile from Westfield P. O. and railway station, on line of Lake Shore Ry.; 1 mile from school and church. Good roads. Nearest city, Dunkirk, 17 miles distant, population 17,000, reached by rail. Surface of farm level. Altitude about 1,100 ft. Soil, clay and sandy loam. All tillable. Fruit, 17 acres grapes, 4 acres orchard, 1,000 currant bushes, 100 cherry trees also peaches, pears, plums, quinces and strawberries. Best adapted to fruit and berries. House, 12 rooms, natural gas, good repair. Outbuildings, fine barn,

40x80, basement with cement floor, windmill. Watered by wells. Occupied by owner. Reason for selling, ill health of owner. Price, \$15,000. Horses, wagons, tools, grain, hogs and chickens will be sold with farm, if desired for \$2,000 extra. Address W. A. Cochran, Westfield, N. Y.

No. 151—Farm of 26 acres, located 5 miles from Westfield P. O., R. D. 20 and railway station, on line of Lake Shore Ry.; 1 mile from shipping station, on line of Lake Shore Ry., close to school, 2 miles from Protestant church. State road. Nearest city, Dunkirk, 17 miles distant, population about 17,000, reached by rail. Surface of farm level. Altitude about 1,100 ft. Soil, clay loam. Acres in meadow, 5; in natural pasture, 3; in timber, 2; second growth. Acres tillable, 23. Fruit, 9 acres of grapes, 30 apple, 25 cherry trees, $\frac{1}{2}$ acre of black berries and plenty of other fruit for home use. Best adapted to fruits and berries. House, large, 14 rooms. Outbuildings, barn 30x40, with shed 12x30, packing house 20x40 with shed. Watered,

house and barns by well, fields by running water. Lake Erie is 1 mile from farm. Occupied by owner. Price, \$5,000. Terms, can arrange terms satisfactory to responsible parties. Address Albert Napper, R. D. 20. Westfield, N. Y.

No. 152—Farm of 15 acres, located $1\frac{1}{2}$ miles from Westfield P. O., R. D. 20; $\frac{1}{4}$ mile from shipping station, on line of Lake Shore Railway, $1\frac{1}{2}$ miles from school, Catholic and Protestant churches. State road. Nearest city, Dunkirk, 17 miles distant, population about 17,000, reached by rail. Surface of farm level. Altitude about 1,100 ft. Soil, clay loam. All tillable. Fruit, 11 acres of grapes, $\frac{1}{2}$ acre raspberries, 24 prune and 26 cherry trees. Best adapted to grapes, berries, etc. House, 10 rooms, 2 stories, good condition. Outbuildings, barn, 36x40, fair condition and packing house. Watered, house and barn by well, fields by spring. This farm is 1 mile from Lake Erie. Occupied by owner. Price \$5,500. Terms, $\frac{1}{2}$ down. Address W. R. Pardue, Westfield, N. Y., R. D. 20.

CHEMUNG COUNTY

Area, 513 square miles. Population, 54,662. Annual precipitation, 33.74 inches. Annual mean temperature, 50.9°. Number of farms, 2,193. Average price of farm land per acre, \$33.56. The value of all farm property is \$10,288,587. This is a remarkably low price for good farm lands. That the farmers of this county are prosperous is proved by an increase in the value of farm buildings of nearly \$700,000, during the last ten years.

This is a lower tier county bordering on Pennsylvania and one of the smaller counties of the state.

The surface is uneven and rolling, in some places rising in considerable mountains. The country along the river banks is level and alluvial and those flats are in some places extensive and exceedingly fertile. There is considerable timber on the more mountainous portions of the county. It is well watered by springs, creeks, ponds and the Chemung River. Along the broad valley of this river tobacco is extensively grown, producing more of that material than any other area of its size in the state. There are several streams tributary to the Chemung River whose valleys are now bordered by steep hills with a soil and gravelly loam intermixed in some places with clay. There are ample markets for all products of the county and the trunk lines of transportation give easy access to inexhaustible markets both in New York and Pennsylvania.

The leading crops are as follows: corn, 106,999 bushels; oats, 253,138 bushels; buckwheat, 188,079 bushels; potatoes, 370,110 bushels; hay and forage, 51,053 tons; tobacco, 2,903,700 pounds. Domestic animals are as follows: dairy cows, 11,035; horses, 5,421; swine, 4,099; sheep, 7,000; poultry, 92,712; total receipts for dairy products, \$521,565; amount of milk produced, 5,539,570 gallons. There are 111 district schools, a college located at Elmira, where is also one of the New York State reformatory institutions and the Erie Railroad car shops which employ a large number of workmen.

TOWN OF BALDWIN

Population 476

No. 153—Farm of 70 acres, 5 miles from Lowman station and postoffice, R. D., 5 acres of timber. This farm lies well

and is in good condition. 3 miles from State road. 2 apple orchards, a windmill at the barn, well and cistern in house. Good fences. The house is nearly new, with 9 rooms and 5 large clothes-presses, large pantry. Barn, 32x61;

granary, 16x29; cow stable, 26x36; large workshop. Price, \$2,700. Terms, $\frac{1}{2}$ cash, balance on time. This farm has never been rented. Address R. B. Osborne, Lowman, N. Y.

No. 154 — Farm of 257 acres, $2\frac{1}{2}$ miles from Lowman P. O. and $1\frac{1}{2}$ miles from station on D., L. & W. R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from churches; on line of R. D. 2 from Lowman; $3\frac{1}{2}$ miles from milk station and cheese factory. Highways, good. Nearest city, Elmira, population 38,000, distant $4\frac{3}{4}$ miles. Surface of farm, lying on top of hill, but level and rolling. Soil, mostly clay subsoil. Acres in meadow, 50; natural pasture, 80; timber, 60. Estimated 50,000 feet of sawing timber, pine, chestnut, oak, basswood and ash. Acres tillable, 100. No fruit. Best adapted to hay, barley, buckwheat, potatoes, etc. Good fences, wire. House, 9-room cottage, in good condition. Outbuildings: pigpen and corncrib, 16x20, grain barn, 30x40, toolhouse, 20x20, cow barn, 24x48, concrete floor. The buildings are in very fair condition. Toolshed and addition to cow barn have new iron roof. Water can be brought to barns at small expense. Watered, house by well and tank near barn; fields, by springs. Reason for selling, closing estate. Price \$4,000, including 10 cows now on the farm. Terms, \$1,000 cash, balance on long time at 5%. Address E. M. Lowman, Lowman, N. Y.

No. 155 — Farm of 80 acres, located 2 miles from North Chemung P. O., R. D. 1; 5 miles from railway station at Erin, on line of Lehigh Railway; $1\frac{1}{2}$ miles from school; $2\frac{1}{2}$ miles from Protestant church; 2 miles from butter factory. Nearest city, Elmira, population about 38,000, 9 miles distant, reached by highway. Surface of farm, rolling. Soil, clay loam. Acres in meadow, 25; in natural pasture, 15; in timber, 20, hard wood, hemlock and pine. Acres tillable, 60. Fruit, 30 apple trees, a few peaches, pears and plums. Best adapted to corn, potatoes, buckwheat and oats. Fences, board, rail and wire, poor condition. House, upright 16x24, kitchen, 16x10. Barn, 32x42, with basement, good condition. Watered, house by well, barn by spring; fields by spring and brook. Occupied by owner. Reason for selling, owner is a widow and cannot attend to property. Price, \$1,000. Terms, cash.

Address Mrs. Carrie G. Hall, Lowman, N. Y., R. D. 2.

No. 156 — Farm of 250 acres, located 9 miles from Elmira P. O., R. D. 1; 5 miles from railway station at Erin, on line of Lehigh R. R.; $\frac{1}{4}$ mile from school; $1\frac{1}{2}$ miles from church; 2 miles from butter factory and milk station; 9 miles from milk condensing plant. Highways, in good condition. Nearest city, Elmira, population about 38,000, reached by highway. Surface of farm, part hilly and part level. Soil, clay and loam. Acres in meadow, 50; in natural pasture, 50; in timber, 80, hard and soft wood. Acres tillable, 120. Fruit, 75 apple, 5 cherry, 6 pear and 6 plum trees. Best adapted to corn, wheat, rye, oats and buckwheat. Fences, American wire and stone wall. House, 14 rooms, good condition. Outbuildings: Barn, 48x36; barn, 38x40; granary, 25x20; shop, 18x20, and hoghouse, 20x30. Watered by well, spring and creek. Occupied by owner. Reason for selling, ill health of owner. Barn, 38x30 for cows now being constructed. Price, \$4,500. Terms, part cash. Address Clark S. Bowman, Lowman, N. Y., R. D. 1.

No. 157 — Farm of $230\frac{1}{2}$ acres, located 8 miles from Lowman P. O., R. D. 1; 5 miles from railway station at Erin on line of Lehigh R. R.; 1 mile from school; 2 miles from churches; $1\frac{1}{2}$ miles from butter factory; 5 miles from cheese factory and milk station; 9 miles from milk condensing plant. Highways in fair condition. Nearest city, Elmira, 9 miles distant, population about 38,000, reached by highway. Surface of farm, some rolling and some nearly level. Soil, mostly dark loam, clay sub-soil. Acres in meadow, 88; natural pasture, 74; timber, 42; hemlock, basswood, ash, beech, maple and cherry. All cleared land is tillable. Fruit, about 30 old trees; also some young trees of apples, pears, plums and cherries. Best adapted to oats, corn, buckwheat, wheat, potatoes, barley and beans. Fences, mostly wire and rail, some pine stump and stone. House, 11 rooms, good condition. Outbuildings, barn, 30x40; barn, 32x60, with leanto, 16x54; 14 stanchions for cows; 8 horse stables, cement floor. Watered, house, by well; barns, by spring; fields by spring and small creek. Occupied by owner. Reason for selling, ill health of owner. Price, \$4,300. Terms, cash. Address W. H. Brewer, Lowman, N. Y., R. D. 1.

TOWN OF CHEMUNG

Population 1,328

No. 158 — Farm of 120 acres, $1\frac{1}{4}$ miles from Chemung P. O. and railway station. Soil, clay and loam. Acres in meadow, 25; acres, pasture, 60; acres, timber, 5. House, 26x36, and 16x36, good condition. Barn, 36x56, with basement; tobacco shed, 28x56; granary, 16x24; silo, 14x14. Watered by well and springs. Fences, stump and wire, in good condition. Price, \$5,000. Terms, \$2,000 down, balance on long time. Name and address of owner, William DeWitt, Chemung, N. Y.

TOWN OF ERIN

Population 889

No. 159 — Farm of 139 acres, located 1 mile from P. O.; 1 mile from railway station at Swartwood, on line of L. V. R. R.; 1 mile from school and Methodist church; $\frac{1}{2}$ mile from butter factory; $3\frac{1}{2}$ miles from milk station. Highways, good. Nearest village, Van Etten, 4 miles distant; Spencer, 8 miles distant; Elmira, population 38,000, 19 miles distant, reached by both rail and highway. Surface, part hilly. Soil, clay and loam. Fruit, 60 or more apple trees. Best adapted to hay, buckwheat, potatoes and dairying. Fences, board, rail and wire, not very good. House, 20x32; 2 barns, 30x40. Watered, house, by well; barns, by brook; fields, by brook and spring. Unoccupied. Reason for selling, death of owner. Price, \$1,800. Terms, part cash. Address Sophie A. White, 58 Port Watson Street, Cortland, N. Y.

No. 160 — Farm of 312 acres, located $1\frac{1}{2}$ miles from North Chemung P. O., R. D.; 3 miles from railway station at Breesport, on line of the L. V. R. R.; $\frac{1}{2}$ mile from school and Union church; 1 mile from butter factory; 3 miles from milk station. Highways, good. Nearest city, Elmira, population 38,000, distant 8 miles by highway. Surface of farm, a little rolling. Soil, gravel and loam, very good. Sixty acres of meadow; about 50 of natural pasture; 40 to 50 acres of timber, of all kinds and very good; 250 acres are tillable. Plum, cherry, pear and apple trees. Can raise hay, corn, wheat, oats, buckwheat and general crops. Fences, wire and stumps, in fair condition. 2 houses, one nearly new, 16x32, bay window and

porch, 2 stories, with ell, 16x24, with porch, woodhouse, and a fairly good tenant house. 3 barns with basements; No. 1, 34x118, straw shed attached and large silo; No. 2, 32x44, with basement; horse barn, 28x32. House has well water; barns have creek and spring, never-failing; fields have creek and springs. The Chemung River is about 5 miles distant. This is a first-class dairy farm and owner will give cows with farm. Occupied by tenant. Can give possession any time. Reason for selling, old age of owner. Price, \$8,000. Terms, $\frac{1}{2}$ cash, balance very easy terms. Address Seymour Seeley, Spencer, N. Y.

TOWN OF HORSEHEADS

Population 5,376

No. 161 — Farm of 110 acres, located 2 miles from Horseheads P. O. and railway station, on line of Erie, N. C. & D., L. & W. R. R.; $\frac{1}{2}$ mile from school; 2 miles from churches, butter factory and milk station. Highways, good. Nearest city, Elmira, population 38,000, reached by rail and highway, 8 miles distant. Surface of farm, rolling. Soil, clay loam. 4 acres of oak timber. Acres tillable, 106. Fruit, apples and pears. Best adapted to corn, oats, wheat and tobacco. Fences, wire and board. House, 10 rooms, fair condition. Outbuildings, barn, 30x40; barn, 20x50; barn, 16x32; barn, 30x40. Watered by well, windmill and springs. Occupied by tenant. Reason for selling, to close an estate. Price, \$6,500. Terms cash. Address Geo. B. Manning, Horseheads, N. Y.

TOWN OF SOUTHPORT

Population 2,034

No. 162 — Farm of 63 acres, located 4 miles from Pine City P. O., R. D. 2; $6\frac{1}{2}$ miles from railway station at Pine City, on line of Erie R. R.; $\frac{3}{4}$ mile from school; 4 miles from Protestant church; $3\frac{1}{2}$ miles from cheese factory; 6 miles from milk condensing plant. Highways, good. Nearest city, Elmira, population about 38,000, $6\frac{1}{2}$ miles distant, reached by highway. Surface of farm, rolling. Altitude, about 2,000 feet. Soil, loam, clay sub-soil. Acres in meadow, 25; in natural pasture, 6; in timber, $3\frac{1}{2}$, hard wood, maple, ash, oak and chestnut. Acres tillable, 54. Fruit, about 30 trees, apples, pears, cherries put out about 4 years ago, 10 old apple trees. Best adapted to potatoes, buckwheat, oats,

corn, etc. Fences, wire and stump, good condition. House, medium size, good condition. Outbuildings, medium size barn, good condition. Watered, house and barn by well, fields by springs. Occupied by owner. Reason for selling, owner desires to buy a larger farm. Price, \$1,500. Terms, \$1,000 down, balance on time to suit purchaser. Address Carl F. Kakritz, Pine City, N. Y., R. D. 2.

TOWN OF VETERAN

Population 1,470

No. 163 — Farm of 227½ acres, located 3½ miles from Alpine P. O., R. D. 3 and railway station, on line of Lehigh Valley Ry.; ½ mile from school; 2 miles from Baptist church; 8 miles from butter factory and cheese factory; 3 miles from milk station. Highways, somewhat hilly but good. Nearest large village,

Horseheads, 8 miles distant, population about 1,800, reached by highway and electric cars. Surface of farm, rolling. Altitude, about 1,400 feet. Soil, gravelly loam. Acres in meadow 60, in natural pasture, 60; in timber, 27½, hemlock, chestnut and pine, good. Acres tillable, 200. Fruit, 85 apple, 6 pear, 12 plum and 4 cherry trees. Best adapted to oats, buckwheat, corn, potatoes, beans and hay. Fences, rail and wire, good. House, upright, 20x24, with kitchen attached, good condition. Outbuildings, barn, 86x46, new; barn, 36x48; good also other outbuildings. Watered, house by well and spring; barn, by well; fields, by springs. Occupied by owner. Reason for selling, advanced age of owner. Price, \$35 per acre. Terms, 1/3 cash, remainder on mortgage. Address John Hamilton, Alpine, Schuyler County, N. Y.

CHENANGO COUNTY

Area, 898 square miles. Population, 35,575. Annual precipitation, 56.23 inches. Annual mean temperature, 47.4°. Number of farms, 4,258. Average price of farm land per acre is \$27.63. With an increase of nearly \$2,000,000 in the value of farm buildings alone there must be prosperity among the farmers and it seems inevitable that land values in this county should show a decided increase during the next two years.

This is one of the interior counties lying southeast of the center of the state.

The surface is elevated and in some places broken and hilly. Two broad and deep valleys traverse the county from north to south. These ridges are subdivided by numerous lateral and some parallel valleys. The summits of these ridges are broad and rolling with an elevation of 300 to 800 feet. There is considerable timber on this upland. Streams, brooks, and springs abound throughout the county and furnish abundant water for villages and farms. Tully limestone and Genesee slate and sandstones are found in the southern part of the county. The sandstone quarries furnish good material for building and flagging. Grindstone and whetstones are quarried near Oxford.

The soil of the county is almost entirely derived from the disintegration of the rocks and is strong and productive. The D., L. & W.; N. Y., O. & W. and D. & H. railroads give ample, cheap and quick transportation of all farm products to the great markets of the state. Dairying is the great industry and the production was 29,919,490 gallons of milk; receipts from the sale of dairy products, \$2,957,886. There are fifty-eight milk stations and factories in this county. The leading crops grown were corn, 177,897 bushels; oats, 440,758 bushels; barley, 4,935 bushels; buckwheat, 75,922 bushels; potatoes, 671,087 bushels; hops, 69,749 pounds; hay and forage, 222,054 tons. The value of all farm property is \$20,912,000, an increase of 19.2 per cent. over that of ten years ago.

Chenango is an excellent fruit county; some of the famous apples originated in this county, notably the Chenango strawberry apple. There are churches of all denominations located in the rural districts, and the 355 district schools, graded and high schools in villages furnish ample educational facilities. There are 1,661 miles of improved highway and 54 miles of state road.

TOWN OF AFTON

Population 1,780

No. 164 — Farm of 220 acres, located 2 miles from Harpursville P. O., R. D. 1; 1½ miles from railway station at Harpursville, on line of D. & H. Ry.; ½ mile from school; 2 miles from churches; 1½ miles from milk station. Highways,

good. Nearest city, Binghamton, 23 miles distant, population about 48,000, reached by rail. Surface of farm, rolling. Soil, clay loam. Acres in meadow, 75; in natural pasture 100; in timber, 45, hemlock, chestnut and hardwood. Acres tillable, 150. Fruit, young orchard. Best adapted to hay, corn, pota-

toes, oats and buckwheat. Fences, wire, good. House, 13 rooms, good condition. Outbuildings, barn, 66x30, with basement for 40 cows, horse barn attached, 26x36; granary, 18x24, good condition. Watered by spring and creek. This farm is 1½ miles from Susquehanna River. Occupied by owner. Reason for selling, owner desires to engage in other business. Price, \$6,000. Terms, \$2,000 down, remainder on easy terms at 5% interest. Address A. B. Pratt, Harpursville, N. Y., R. D. 1.

*No. 165 — Farm of 240 acres, located 6 miles from Afton P. O., R. D. 2 and railway station, on line of D. & H. Railway; 1 mile from school; 3 miles from Protestant churches; 6 miles from butter factory, milk station and milk condensing plant; 8 miles from cheese factory. Highways, somewhat hilly but good. Surface of farm, part hilly and part level. Altitude, about 850 feet. Soil, clay loam and red shale. Acres in meadow, 50; in natural pasture, 40; in timber, 60, maple, chestnut oak and hemlock. Acres tillable, about 80. Fruit, apples and cherries. Best adapted to oats, hay, potatoes, millet and buckwheat. Fences, wire, pole and rail, good condition. House, good size, also tenant house. Outbuildings, 2 barns, shed and outbuildings, all in good condition. Occupied by owner. Reason for selling, advanced age of owner. Price, including 12 cows, team and tools, \$4,500. Terms, \$1,500 down, balance to suit purchaser. Address Volney K. Soule, agent, Binghamton, N. Y.

TOWN OF BAINBRIDGE

Population 2,017

No. 166 — Farm of 166 acres, located 3 miles from Bainbridge P. O., R. D. 1; 3 miles from Bainbridge railway station, on line of D. & H. R. R.; 1 mile from school; 1½ miles from churches (Methodist and Baptist); 3 miles from butter factory and condensing plant. Highways, some hilly, but good. Nearest city, Binghamton, population 48,443, 35 miles by rail and highway. Surface features, rolling and level. Soil, fertile, clay subsoil. Acres in meadow, 40; pasture, 76; timber, 50, hemlock and pine, second growth, beech, birch and maple. Land all tillable except wood lot. Best adapted to corn, oats, potatoes, millet and grass. Fences, wire and rail, in good condition. House, good, 16-room house, cellar under all, flag bottom.

Outbuildings: barn, 40x44, basement, concrete floor; wagon barn, 30x40, with stables, 16x40; cornhouse, 16x20; large wheel and saw for cutting wood. Watered, house, by well; barns and fields, by creeks. Bocket Lake, 3 miles. Occupied by owner. Owner will sell stock and tools with farm if desired, at a low cost. Reason for selling, poor health of owner. Price, \$3,500. Terms, part cash, balance to suit purchaser. Address A. L. Ireland, Bainbridge, N. Y.

No. 167 — Farm of 56 acres, 4 miles from Bainbridge, R. D. Loamy soil, easily worked; very productive. House, 30x32, first-class repair, nearly new. Large barns, sheds and chicken house, all in good repair. Spring water running at house and barns. Good fences. Plenty of fruit of all kinds; 250 sugar maple trees. Price, \$2,000. Terms, \$500 cash, balance on time. Address Cory D. Thornton, Bainbridge, N. Y., R. D.

No. 168 — Farm of 325 acres, located 1½ miles from Bainbridge P. O.; 1½ miles from railway station at Bainbridge, on line of D. & H. R. R.; 1/10 mile from school; 1½ miles from Baptist, Methodist, Catholic and Presbyterian churches; 1½ miles from milk station; 4 miles from condensing plant. Highways, hilly but good. Nearest city, Binghamton, population 48,443, 35 miles distant, reached by D. & H. R. R. Surface of farm, part level and part rolling. Soil, good. Acres in meadow, 125; in natural pasture, 100; in timber, 100, oak, chestnut and pine; acres tillable, 150. Fifty apple trees. Best adapted to hay, corn, oats and potatoes. Fences, wire and rail, in good condition. Large 2-story house, in good condition. Large basement barn, 100x40, cement basement, horsebarn, haybarn, cornhouse and milkhouse. House watered by well; barns, by running water; fields, by springs; 1½ miles from Susquehanna River; \$5,000 worth of standing timber on this farm. Occupied by tenant. Reason for selling, poor health of owner. Price, \$10,000. Terms, cash. Owner will rent with option to buy. Address D. J. Baker, Bainbridge, N. Y.

TOWN OF COLUMBUS

Population 838

No. 169 — Farm of 200 acres, 5 miles from Sherburne P. O. and New Berlin P. O., R. D. 1; on line of D. L. & W. and O. & W. R. R.; ¾ mile from school;

* Farm is in hands of agent or real estate dealer.

1½ miles from three churches; 5 miles from milk station and condensery. Highways, good. Surface features, rolling. Soil, gravelly loam, good. Acres in meadow, 50; natural pasture, 125; timber, 25, beech, birch and maple; acres tillable, 175. Fruit, 50 apple and 10 pear trees. Best adapted to dairying, grass, potatoes, corn, oats and buckwheat. Fences, wire, in good condition. House, 30x45, needs some repair. Three barns, one 30x60, with basement, in good condition; one, 30x40; one, 20x30. Watered, house, by well; barns, by springs and brooks. Occupied by tenant. Rented for one year with privilege of selling. This farm is on the main road from Sherburne to New Berlin, with R. D. and telephone line. A first-class dairy farm, very productive. Reason for selling, age of owner and difficulty of obtaining help. Price, \$2,500. Terms, \$1,000 down, balance on bond and mortgage, or on interest and \$150 a year on principal. Owner will rent for cash or with option to buy. Address E. C. Bryant, Sherburne, N. Y., R. D. 1.

No. 170—Farm of 145 acres, located 9 miles from New Berlin P. O., R. D. 3; 3 miles from railway station at Sweets, on line of Unadilla Valley R. R.; ¾ mile from school; 2½ miles from Freewill Baptist church; 5 miles from butter factory, cheese factory and milk station; 9 miles from condensing plant. Highways, good. Nearest villages, New Berlin, population 1,114, 9 miles distant; Sherburne, population 1,200, 11 miles distant; reached by highway. Surface of farm, part rolling, part level, part hilly. Altitude, 1,600 feet. Soil, gravel and loam. Acres in meadow, 40; in natural pasture, 60; in timber, 45, basswood, ash, maple and beech; acres tillable, 80. Fruit, 5 acres of apples, 5 kinds of pears. Best adapted to dairying. Fences, stone wall, rail and wire, in good condition. House, 84x24, well painted, slate roof, 2 stories, observatory on top, 20 rooms, large cellar, furnace in conservatory, in good condition. Barn, 30x40, barn, 20x30, shed, 40x20, crib, 12x18, henhouse, 12x24, 2 shops. Watered, house by well; barn, by well, lead pipe to trough; fields, by 3 springs and brook. 3 miles from Unadilla River. Occupied by tenant. Reason for selling, to settle an estate. Price \$3,000. Terms, \$1,500 cash, balance on mortgage. Address F. J. Tuttle, Norwich, N. Y.

TOWN OF COVENTRY

Population 764

No. 171—Farm of 100 acres, located ½ mile from Coventryville P. O., R. D. 4; 4½ miles from railway station at Coventry, on line of D., L. & W. R. R.; 7 miles from Afton, on D. & H. R. R.; 7 miles from Oxford, on O. & W. R. R.; ½ mile from school; ½ mile from Congregational church; 2 miles from Methodist and Presbyterian churches; ½ mile from butter and cheese factories; 2 miles from milk station. Highways, good; State road surveyed through section. Nearest city, Norwich, population 7,422, distant 17 miles, reached by rail and highway. Altitude, 1,517 feet. Soil, very good, clay loam. Acres in meadow, 25; in natural pasture, 40; in timber, 12 or 15, hemlock, beech, maple, and a little pine and chestnut, very fine timber; acres tillable, 80. 75 apple, 20 pear, 10 plum trees, also grapes and small fruits. Nice asparagus bed. Best adapted to corn, potatoes, oats, buckwheat, millet and garden truck. Fences, rail, wire and board, in good condition. 10-room house, 30x40, with wing, painted white, in fine condition. Cow and hay barn, 50x50; horse and wagon barn, 40x40; toolhouse, 20x24, 3 stories; hay barn, 16x20; 5 henhouses for 250 hens; sugarhouse; cornhouse; all nearly new. Running water in house and at barns; streams in fields. Three miles from Brocket Lake. Three-fourths mile from good trout stream. Occupied by owner. Place never has been rented. Income last year, \$1,500. Buildings insured for about \$2,200. A healthy climate and nice community. Will meet any one wishing to see the farm at any of the above-mentioned stations, on notice. Reason for selling, poor health of owner who wants smaller place and less work. Price, \$2,300, with all timber 1 foot through and over reserved; or \$2,800 with all timber. Terms, \$1,000 down, balance on bond and mortgage at 5%. Address A. P. Williams, Coventryville, N. Y.

No. 172 — Farm of 83 acres, 2 miles from North Village; 4 miles from railway station, on line of Utica Division of the D. L. & W. R. R.; 1 mile from school; 2 miles from churches; 2 miles from milk station. Highways, level and good. Nearest villages, Oxford and

Greene, 9 miles distant. Surface of farm, nearly level, southern exposure. Acres in pasture, 30; in meadow, 20; in timber, 28, hemlock, beech, chestnut and maple; a grove of sugar maples of 75 trees; acres tillable, 55. Fruit, about 80 thrifty apple trees, some pears and good variety of other fruit. Best adapted to oats, corn, potatoes, etc. Fences, mostly wire, some rail and stone. House, in good condition. Out-buildings, 30x40, with basement stables; horse barn, 22x28, with basement. Watered by well and springs. Reason for selling, advanced age of owner. The owner will leave farm tools, lumber wagon and stoves, all of which are in good condition. Price, \$1,500. Terms, \$500 cash, balance can remain on bond and mortgage. Address S. S. Hopkins, Coventry, N. Y.

No. 173 — Farm of 98 acres, located $\frac{1}{2}$ mile from Coventry P. O.; 4 miles from railway station at Brisben, on line of D. L. & W. R. R.; $\frac{1}{2}$ mile from school, churches, butter factory, cheese factory, and milk station. Highways, good. Nearest village, Greene, population 1,300, 7 miles distant, reached by highway. Surface of farm, level. Soil, red stone. Acres in meadow, 36; in natural pasture, 50; in timber, 12, hard wood; acres tillable, 50. Fruit, 50 apple, 5 pear and 10 plum trees. Best adapted to oats, corn and buckwheat. Fences, wire, in good condition. House, $1\frac{1}{2}$ story, in good condition. Two barns, one 32x42, one 24x48, in good condition. Watered, house and barn, by well; fields, by spring and creek. Four miles from Chenango River. Occupied by owner. Reason for selling, owner wants smaller place. Price, \$1,750. Terms cash. Address Theodore E. Walters, Coventry, N. Y.

*No. 174 — Farm of 40 acres, located 1 mile from Coventryville P. O.; 4 miles from railway station at Coventry, on line of D. L. & W. R. R.; 1 mile from school; 1 to 2 miles from Baptist, Congregational and Methodist Episcopal churches; 1 mile from butter factory. Highways, good. Nearest village, Oxford, population 1,654, 8 miles distant, reached by railway and highway. Surface of farm, part level and part rolling. Soil, clay loam. Acres in meadow, 20; in natural pasture, 15; in timber, 5, maple, beech, ash; acres tillable, 20.

Fruit, 25 apple and 3 pear trees, also some plums and cherries. Best adapted to grass, grain, vegetables, corn, etc. Fences, in fair condition. House, $1\frac{1}{2}$ stories, 9 rooms, needs repairing. Barn, 22x32, room for hay and 6 cows, small granary and henhouse, all in need of repairs. Watered, house, by well; barns, by spring; fields, by spring and creek. This would make a good poultry farm. Occupied by owner. Reason for selling, owner has business at a distance. Price, \$850. Terms, \$500 cash, balance on mortgage. Address C. O. Gale, agent, Oxford, N. Y.

No. 175 — Farm of 94 acres, $\frac{1}{2}$ mile from post-office, school and Protestant churches, 5 miles from railway station. Highways, good dirt roads. Nearest city, Binghamton, 20 miles distant, population about 48,000, reached by highway. Surface of farm sloping. Soil, clay. Acres in meadow, 30; in natural pasture, 54; in timber 10, chestnut and hard wood. Acres tillable, 84. Fruit, 30 trees. Best adapted to corn, oats and potatoes. Fences in good condition. House, 9 rooms, fair condition. Barn, 70x48, fair condition. Occupied by owner. Watered by well and never-failing spring. Price \$16 per acre. Terms cash. Reason for selling, ill health of owner. Address Claude Wilder, Coventry, N. Y.

TOWN OF GERMAN

Population 371

No. 176 — Farm of 218 acres, located 3 miles from German P. O.; 6 miles from railway station at Glen Brook, on line of D. L. & W. R. R.; $\frac{1}{8}$ mile from school; 3 miles from Methodist church; $\frac{3}{4}$ mile from butter factory and cheese factory; $4\frac{1}{2}$ miles from milk station; 9 miles from condensing plant. Nearest city, Binghamton, population 48,443, 26 miles distant. Highways, hilly but good. Soil, clay loam. Acres in meadow, 50; in natural pasture, 75; in timber, 88, maple, hemlock, ash, cherry, basswood, beech; acres tillable, 100. Fruit, 100 apple, 3 pear trees. Best adapted to potatoes, corn and oats. Fences, stone wall, rail and wire, in good condition. House, 30x40, 10 rooms and basement, in good condition. Barn, 30x40; basement barn, 30x50; basement horse barn, 26x36; granary; henhouse; hoghouse. Watered, house and barn by springs;

*Farm is in hands of agent or real estate dealer.



FIG. 6.—BUILDINGS ON FARM 176, TOWN OF GERMAN, CHENANGO COUNTY.

fields, by springs and brook. Five miles from Silver Lake, 6 miles from Echo Lake, 4 miles from Otselic River. A good dairy and stock farm, keeps 24 cows and 3 horses. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$4,000. Terms, \$1,000 cash, balance on mortgage at 5%. Owner will rent for cash or on shares. Address Uriah Loomis, Smithville Flats, N. Y.

*No. 177—Farm of 225 acres; located 2 miles from McDonough P. O.; 8 miles from railway station at Cincinnatus, on line of D. L. & W. R. R.; $\frac{1}{4}$ mile from school; 2 miles from Baptist, Methodist Episcopal and Episcopal churches; 2 miles from butter factory. Highways, somewhat hilly but good. Nearest large village, Greene, population 1,300, 11 miles distant, reached by highway. Surface of farm, part level, part rolling. Soil, clay loam. Acres in meadow, 75; in natural pasture, 125; in timber, 25, mostly hard wood, beech, and maple; acres tillable, 75. Fruit, apples, pears, cherries and grapes. Best adapted to hay, potatoes, corn, oats and buckwheat. Fences, wire and stone, in good condition. House, 2 stories, 12 rooms, in good condition. Barn, 30x50; horse barn, 30x35; both in good condition. Watered, house and barns, by running water; fields, by creek. This is a good dairy and stock farm. Tools are included with farm. Occupied by owner. Reason for selling, owner is unable to work farm. Price, \$3,500, 4 cows and tools included. Terms, \$1,700 cash, balance on time. Address C. O. Gale, agent, Oxford, N. Y.

*No. 178 — Farm of 105 acres, located 3 miles from McDonough P. O.; 10 miles from railway station at Greene, on line of D. L. & W. R. R.; 1 mile from school; 3 miles from Methodist Episcopal, Baptist and Episcopal churches; 3 miles from butter factory. Highways, somewhat hilly but good. Nearest large village, Greene, population 1,300, 10 miles distant, reached by highway. Surface, level. Soil, clay loam. Acres in meadow, 30; in natural pasture, 40; in timber, 35, maple, beech and hemlock; acres tillable, 30. Best adapted to hay, grain, potatoes, vegetables, pasturage. Fences, wire, in good condition. House, $1\frac{1}{2}$ stories, 6 rooms, comfortable. Barn, 30x40; horse barn; henhouse; cornhouse; sugarhouse; all in good condition. House and barn watered by spring; fields, by spring and

creek. Sugar bush is a source of income. Occupied by owner. Reason for selling, owner wishes larger farm. Price, \$1,400. Terms, \$800 cash, balance on mortgage. Address C. O. Gale, agent, Oxford, N. Y.

TOWN OF GUILFORD

Population 2,013

No. 179 — Farm of 114 acres, 4 miles from Bainbridge P. O. and railway station, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school; 4 miles from 5 churches; R. D. 3 from Bainbridge. Good roads. Four different milk stations and shipping stations within 2 to 4 miles of farm. Nearest village, Bainbridge, population, 1,200, distant 4 miles, reached by highway. Surface of farm, rolling. Soil, good. Acres in meadow, 40; in natural pasture, 54; in timber, 20, hemlock, pine, chestnut and hard wood; acres tillable, 94. Fruit, 5 plum, 4 pear, 35 apple trees, 2 grapevines, also currants and berries. Adapted to all crops. Fences, wire and rail, in good condition. House, 20x26, and ell, 18x36, 2 stories, good condition, new. Barn, 32x60, lean-to, 24x68, granary, henhouse, shop. Watered, house, by running water and 2 wells; barns, by running water; fields, by brook and streams. Susquehanna River, 4 miles distant. Reason for selling, wife is dead and son in high school. Owner will sell stock, team and tools if wanted, at a bargain. Owner will meet prospective buyers at Bainbridge. Price, \$2,800. Terms, \$2,050 down, balance on mortgage. Name and address of owner, O. L. Yale, Bainbridge, N. Y., R. D. 3.

*No. 180 — Farm of 120 acres, located 2 miles from Guilford P. O. and railway station, on line of O. & W. Ry., $\frac{1}{2}$ mile from school; 2 miles from Protestant churches, butter factory and milk station. Nearest large village, Oxford, population about 1,600, 6 miles distant, reached by highway. Surface of farm rolling. Altitude about 1,550. Soil, good productive loam. Acres in meadow, 50; in natural pasture, 60; in timber, 10, 250 sugar maples. Acres tillable, 50. Fruit, apples, pears and raspberries for home use. Best adapted to hay and general farm crops. Fences, wire, board and stone. House, $1\frac{1}{2}$ stories, 10 rooms. Barn in fair condition. Watered, house by well, barn by creek, fields by springs and creek. Occupied by owner. Reason

*Farm is in hands of agent or real estate dealer.

for selling, owner lives in the West and is unable to look after farm. Price, \$3,500. Terms, \$1,500 down, balance on easy terms at 5%. This farm is 1½ miles from Guilford Lake resort. Address C. O. Gale, agent, Oxford, N. Y.

TOWN OF McDONOUGH

Population 813

*No. 181 — Farm of 430 acres, located on McDonough R. D.; 7½ miles from railway station at Cincinnati, on line of D. L. & W. R. R.; ¼ mile from school; 2 miles from Methodist, Episcopal and Baptist churches; 3 miles from cheese factory. Highways, good. Nearest villages, McDonough, population 300, 2 miles distant, and Norwich, population 8,000, 8 miles distant, reached by highway. Surface, part level and part rolling. Soil, clay loam. Acres in meadow, 175; in natural pasture, 175; in timber, 80, hemlock, hard wood; acres tillable, 150. Fruit, 150 apple trees in bearing, and other fruit. Best adapted to grass, hay, grain and potatoes. Fences, stone and wire, in good condition. Two good farmhouses, one has 16 rooms, the other 4 rooms. Ample barn room, in good condition. House and barn watered by running water; fields, by springs and creek. Farm is situated on good road, overlooking beautiful lake and has valuable timber. It is a noted stock farm and is located ½ mile from summer resort. Occupied by owner and tenant. Owner wishes to move. Price, \$12,600. Terms, \$4,000 cash. Forty head of registered cattle and all farming tools included. Address C. O. Gale, agent, Oxford, N. Y.

*No. 182 — Farm of 190 acres, located 3 miles from McDonough P. O.; 8 miles from railway station at Oxford, on line of D., L. & W. R. R.; 1½ miles from school; 3 miles from Baptist, Methodist Episcopal and Episcopal churches; 3 miles from butter factory; 8 miles from milk station. Highways, good. Nearest village, Oxford, population 1,600, 8 miles distant, reached by highway. Surface, part level, part rolling. Soil, clay loam. Acres in meadow, 50; in natural pasture, 90; in timber, 50, maple, beech, hemlock; acres tillable, 50. Fruit, 40 apple trees, bearing, good grafted fruit. Best adapted to hay, corn, oats, buckwheat, potatoes and pasturage. Fences, wire and stone, in

good condition. House, 1½ stories, 10 rooms, needs repairing. Two barns, 36x40, need repairing. Both house and barn can be made comfortable at small expense. Watered, house, by well; barns, by springs; fields, by springs. Borders on Ludlow Lake, which affords fine fishing, boating and bathing. The timber is worth nearly the price of the farm. Unoccupied. Reason for selling, to settle an estate. Price, \$2,200. Terms, \$800 cash, balance on time. Address C. O. Gale, agent, Oxford, N. Y.

*No. 183 — Farm of 210 acres, located 1 mile from E. McDonough P. O.; 6 miles from railway station at Oxford, on line of D., L. & W. R. R.; 1 mile from school; 1 mile from Methodist Episcopal and Baptist churches; 4 miles from butter factory; 6 miles from milk station. Highways, good, mostly State road. Nearest village, Oxford, population 1,600, 6 miles distant. Surface, part level, part rolling. Soil, clay loam. Acres in meadow, 50; in natural pasture, 120; in timber, 25, beech, maple and hemlock; acres tillable, 50. Fruit, 45 choice grafted apple trees. Best adapted to hay, grain, vegetables and pasturage. Fences, wire and stone, in good condition. House, 1½ stories, 10 rooms; also tenant house; both in good condition. Basement barn, 26x72; barn, 28x70; both in good repair; henhouse; icehouse; horsebarn; gasoline engine house. Watered, house and barn, by drilled well; fields, by springs. Forty sugar maples on farm. Occupied by tenant. Reason for selling, to settle an estate. Price, \$3,500, 5 cows and tools included. Terms, \$1,500 cash, balance on time. Address C. O. Gale, agent, Oxford, N. Y.

*No. 184 — Farm of 129 acres, located 2 miles from McDonough P. O., 8 miles from railway station at Cincinnati, on line of D., L. & W. R. R.; ½ mile from school; 2 miles from Protestant churches and butter factory. Highways, in fine condition. Surface of farm, rolling, smooth fields. Soil, clay loam. Acres in meadow, 30; in natural pasture, 80; in timber, 10, maple, beech and hemlock; acres tillable, 50. Fruit, 60 apple and 2 pear trees. Best adapted to general farm crops such as hay, corn and potatoes. Fences, stone and wire.

* Farm is in hands of agent or real estate dealer.

House, 1½ stories, 12 rooms, good condition. Outbuildings in fair condition. Watered by well and creek; ¼ mile from Lake Geneganstlet. Reason for selling, owner in other business. Price, \$1,900. Terms, \$1,200 down, balance on mortgage at 5 per cent. Address C. O. Gale, agent, Oxford, N. Y.

*No. 185 — Farm of 100 acres, located 3 miles from McDonough P. O., R. D. 1; 8 miles from railway station at Oxford, on line of D., L. & W. R. R.; 1 mile from school; 3 miles from Protestant churches, butter factory, cheese factory and 8 miles from milk station. Highways, in good condition. Surface of farm, slightly rolling, smooth fields. Altitude, about 1,500 feet. Soil, good clay loam. Acres in meadow, 30; in natural pasture, 40; in timber, 30, chestnut, pine, hemlock and hardwood; acres tillable, 30. Fruit, 60 apple, 7 pear and 4 plum trees. Best adapted to potatoes, corn, oats, buckwheat and hay. Fences, in good condition. House, 1½ stories, 10 rooms, fair condition. Outbuildings: barn, 26x36; barn, 28x30, and other outbuildings, all in fair condition. Watered by well and spring. Occupied by owner. Price, \$1,600. Terms, \$600 cash, balance on time at 5 per cent. Address C. O. Gale, agent, Oxford, N. Y.

*No. 186 — Farm of 160 acres, located 1½ miles from E. McDonough P. O., R. D. 1; 6 miles from railway station at Oxford, on line of D., L. & W. R. R.; 1 mile from school; 1½ miles from Protestant church; 4 miles from butter factory; 6 miles from milk station. Highways, good, mostly State road. Surface of farm, slightly rolling. Altitude, about 1,500 feet. Soil, loam. Acres in meadow, 50; in natural pasture, 75; in timber, 15, mostly maple and beech; acres tillable, 75. Fruit, 50 apple, 2 pear, 4 plum and 1 cherry tree. Best adapted to corn, potatoes, oats and hay. Fences, mostly wire, good condition. House, 2 stories, 13 rooms, good condition. Outbuildings: barn, 40x70; storage barn, henhouse, shop and granary. Watered, house, by well; barns, by spring; fields, by springs. Occupied by owner. Reason for selling, owner wants smaller farm. Price, \$3,000. Terms, \$1,800 cash, balance on mortgage at 5 per cent. Address C. O. Gale, agent, Oxford, N. Y.

*No. 187 — Farm of 100 acres, located 2 miles from E. McDonough P. O.; 7½ miles from railway station at Oxford, on line of D., L. & W. R. R.; ½ mile from school; 2 miles from church; 3½ miles from butter factory. Highways, good. Surface of farm, nearly level. Altitude, about 1,550 feet. Soil, clay loam. Acres in meadow, 40; in natural pasture, 50; in timber, 10, mostly hard wood; acres tillable, 40. Fruit, 25 apple trees. Best adapted to hay, corn, oats, potatoes and buckwheat. Fences, wire, fair condition. House, 1½ stories, 5 rooms, poor condition. Outbuildings: barn, 28x35; horsebarn, 25x30, poor condition. Watered, house, by well; barns and fields, by spring. Unoccupied. Reason for selling, owner lives too far away to attend to farm. Price, \$1,000. Terms, \$500 cash, balance on mortgage at 5 per cent. Address C. O. Gale, agent, Oxford, N. Y.

TOWN OF NEW BERLIN

Population 2,328

No. 188 — Farm of 167½ acres, situated in Unadilla Valley; ½ mile from the village of New Berlin. Land, all tillable and adapted to grain raising and dairying. Two railroad stations and 2 large milk plants within 1 mile of farm. Telephone and R. D. All kinds of fruit in abundance. Buildings, in good condition. New silo. Fine school, employing 10 teachers. Farm is extremely well watered. Title good. Possession given at any time. Price, \$7,000. Terms, \$1,000 cash, balance on mortgage. Name and address of owner, L. D. Hoadley, New Berlin, N. Y.

No. 189 — Farm of 160 acres, ¾ mile from New Berlin, R. D. Suitable for dairying and stock raising. Five acres of timber; balance meadow and pasture. Watered by springs, brook and Unadilla River. One-half mile from Borden's condensery. State road being constructed. Houses: one, 3 stories, slate roof, 20x60; the other, 24x30, 1½ stories, both in good repair. Barns, 30x60 and 30x40, with basement, in good condition. Fences, good. Have sold \$3,300 worth of milk in one year. Price, \$15,000. Terms, one-half cash, balance on time; will make a good investment at price named. Address Crandall Bros., New Berlin, N. Y.

* Farm is in hands of agent or real estate dealer.

TOWN OF NORWICH

Population 8,560

No. 190 — Farm of 212 acres, $2\frac{1}{2}$ miles from Sherburne P. O., R. D. 3; $2\frac{1}{2}$ miles from Galena station, on line of O. & W., and D., L. & W. R. R., at Sherburne, $2\frac{1}{2}$ miles distant. Soil, gravel, loam, mixed, mostly river flats. Acres in meadow, 106; acres, timber, 10. House, $1\frac{1}{2}$ stories; milkroom, wash and storeroom, woodshed. Watered by a good well. Large barn; cow stable has concrete floor; icehouse. A never-failing spring runs to milkhouse; large vat for watering stock in barn. From 90 to 100 tons of good hay on farm; a new farm wagon, with small broad-tire wheels, so made as to be used for hay wagon, potato or corn wagon; also a disc harrow; mowing machine; hay loader; rotary rake; ditching plow; land roller; post digger. Material on farm for a frame, stone or cement building. R. D. passes door. Telephone line in front and also back of house. Direct road to Binghamton from Utica (also road to Sherburne Falls and Chenango Lake) passes house. Chenango River at foot of slope on which house stands. One old and one young orchard. Milk sent to Borden's condensery, Norwich, N. Y. State road soon to be finished. Trolley line will soon pass farm. Price, \$8,500, including tools, all of the best up-to-date make. Terms, \$2,000 down, balance can remain on mortgage at 5 per cent. Owner will rent with option to buy. Tenant to furnish stock. Address Adelia Haxton Marquis, Norwich, N. Y.

No. 191 — Farm of 345 acres, 6 miles from Norwich, on line of N. Y. O. & W. R. R.; also D. L. & W. R. R. Twenty-five acres timber, balance tillable. Apples and other fruit. Altitude, 600 feet. Twelve-room house. Cow-barn, 96 feet long. Wagon house, hop-house and four hay barns. Watered by springs. Fences, wire and rail. There is timber enough on farm to nearly pay for it, estimated about 200,000 feet of basswood lumber, also maple and beech. Condensing plant located convenient to farm and milk can be shipped to New York. A first-class farm in every respect. This is a fine dairy farm. Fifty cows go with farm if desired. Price, \$25 per acre. Terms, easy. Owner will rent. Address Margaret A. Wood, Norwich, N. Y.

*No. 192 — Farm of 60 acres, located 2 miles from Norwich P. O., on R. D. 4; 2 miles from railway station at Norwich, on line of D. L. & W. and O. & W. R. R.; $\frac{1}{10}$ mile from school; 2 miles from churches of all denominations, butter factory and condensing plant. Highways, mostly State road. Nearest city, Norwich, population 8,000, 2 miles distant, reached by highway. Surface of farm, part level, part rolling. Soil, black loam. Acres in meadow, 25; in natural pasture, 35; some timber; acres tillable, 40. Fruit, 50 apple, 6 pear, 15 plum, 12 cherry trees. Best adapted to vegetables, hay, grain, corn and potatoes. Fences, stone and wire, in good condition. House, $1\frac{1}{2}$ stories, 12 rooms, painted and in good condition. Basement barn, 42x60, in good condition; 3 henhouses; hoghouse; toolhouse; springhouse; icehouse. Watered, house, by spring; barn, by spring and creek; fields, by springs and creek. Two miles from Chenango River. Occupied by owner. Owner of this farm sells large quantities of sweet corn and vegetables at Norwich. Reason for selling, owner is unable to work farm. Price, \$3,800. Terms, \$1,800 cash, balance on time. Address C. O. Gale, agent, Oxford, N. Y.

TOWN OF OTSELIC

Population 1,111

No. 193 — Farm of 439 acres, $\frac{1}{4}$ mile from Otselic Center P. O.; R. D. from Georgetown; 6 to 9 miles from Georgetown, De Ruyter and Smyrna. Soil, gravelly loam. State road. Acres in Meadow, 125; acres in pastures, 244; acres of timber, 70, second growth. Two houses, in good condition. Basement barn, 40x100, with silo attached; barn, 24x60; barn, 36x60; other necessary outbuildings, all in good condition. Watered by springs and streams. Fences, wire and board, in good condition. Good school and churches nearby. Creamery $\frac{1}{4}$ mile distant. On line of survey of Georgetown-South Otselic trolley line, work on which has been begun. farm stocked with 50 head thoroughbred and grade Holstein-Friesian cattle, which will be sold with place, if desired. Price, \$20 per acre. Terms, one-third cash, balance easy terms. Name and address of owner, Walter A. Shepardson, Norwich, N. Y.

No. 194 — Farm of 145 acres, situated 1 mile from Otselic P. O. and 7 miles

* Farm is in hands of agent or real estate dealer.

from Georgetown railway station, on line of W. S. R. R. Highways in good condition. Loam soil. Acres in meadow, 30; tillable, 75; natural pasture, 70; timber, about 30, beech, birch, maple, cherry, basswood, elm, hemlock and ash, medium size. Fruit, about 50 apple trees, 2 pear trees. Best adapted to grass, oats, buckwheat, potatoes and corn. Fences, barbed wire, in good condition. House, 24x30, with wing, 20x36, nearly new, good condition. Barns: basement barn, 34x48; horsebarn, 24x36; hoghouse, 20x20; haybarn, 26x36; henhouse, 12x50; all in good condition. Watered by well, cistern, springs and streams. Price, \$2,000. Terms, \$500 cash, balance on mortgage. Name and address of owner, W. H. Stradling, Otselic, N. Y.

TOWN OF OXFORD

Population 3,014

No. 195 — Farm of 140 acres; 5½ miles from Oxford, R. D. Soil, clay loam. Ten acres timber; balance meadow and pasture. Land under good cultivation. Well watered and in good condition. One and one-half story house, 27x29, with wing, 24x30, in good condition. Barns, large and in good condition. Price, \$5,000. Terms, ½ cash. Address C. H. Smith, Oxford, N. Y., R. D.

*No. 196 — Farm of 270 acres, located on Oxford R. D.; 7 miles from railway station at Oxford, on line of D., L. & W. and O. & W. R. R.; 1 mile from school; 3 miles from Methodist, Episcopal and Baptist churches; 3 miles from butter factory; 7 miles from milk station. Highways, good. Nearest large village, Oxford, population 1,600, 7 miles distant, reached by highway. Surface of farm, part level, part rolling. Soil, loam. Acres in meadow, 70; in natural pasture, 120; in timber, 80, hemlock and hard wood; acres tillable, 75. Fruit, 35 apple, 2 pear, 3 plum trees, grapevine. Best adapted to hay, grain and potatoes. Fences, wire, stone and board. House, 2 stories, 12 rooms, cellar flagged, in good condition. Basement barn, 30x40, nearly new; cornhouse, 20x34; henhouse, 10x20; hogpen, 18x28; smokehouse. Watered, house and barn, by running water. Three-fourths mile from Ludlow Lake, excellent fishing and boating. This is a good productive farm, pleasant view. Occupied by tenant. Reason for selling,

owner has business elsewhere. Price, \$20 per acre. Terms, \$2,500 cash, balance on time. Address C. O. Gale, agent, Oxford, N. Y.

No. 197 — Farm of 90 acres, located 5½ miles from Bainbridge P. O., R. D. 4; 5½ miles from railway station at Bainbridge, on line of D. & H. R. R.; ¾ mile from school; 1 mile from Methodist Episcopal church; 1½ miles from Baptist church; 4 miles from butter factory and cheese factory; 5½ miles from milk station. Highways, good. Nearest village, Bainbridge, 5½ miles distant, reached by highway. Surface of farm, rolling. Soil, good. Acres in meadow, 40; in natural pasture, 20; in timber, 30, oak, chestnut, pine, hemlock, good quality; acres tillable, 50. Fruit, 25 apple, 6 plum, 8 pear, and 3 crab apple trees. Best adapted to potatoes, corn, alfalfa and oats. Fences, mostly wire, some rail, in good condition. House, 20x40, 8 rooms, in fair condition. Hoghouse, 18x20; henhouse, 12x14; woodhouse, 12x14; all in fair condition. Barns burned. Watered, house, by good spring; buildings, by running water in yard; fields, by running water in pasture. One mile from Brocket Lake, 5½ miles from Susquehanna River. Unoccupied. Timber is in fine growing condition, 1 mile from sawmill, good roads to same. Reason for selling, poor health of owner. Price, \$2,500. Terms, \$2,000 cash, balance on easy terms. Address W. E. Ingersoll, Bainbridge, N. Y., R. D. 1.

No. 198 — Farm of 233 acres, located 6 miles from Oxford P. O., R. D.; 4½ miles from railway station at Guilford, on line of O. & W. R. R.; 1 mile from school; 1½ miles from churches; 4 miles from butter factory and cheese factory; 6 miles from condensing plant. Highways, good. Nearest large village, Oxford, population 1,600, 6 miles distant, reached by highway. Surface of farm, part level and part rolling. Soil, fertile. Acres in meadow, 50; in natural pasture, 123; in timber, 60, maple, hemlock, chestnut and oak; acres tillable, 173. Fruit, 80 apple, 9 pear, 8 plum, 6 cherry trees, also currants. Best adapted to corn, oats, potatoes, buckwheat and grass. Fences, rail and wire, in good condition. House, 36x26, extension, 34x26, woodshed, 20x30, 15 rooms, good cellar. Barn with basement, 40x70, horse barn attached; barn, 20x40; henhouse;

* Farm is in hands of agent or real estate dealer.

hoghouse; icehouse; silo; milkhouse, with cement floor and vat, 10x16. Watered, house and barn, by running water; fields, by lake, brook and springs. Brocket Lake adjoins the farm, also a grove. Occupied by owner. Reason for selling, advanced age of owner. Price, \$30 an acre. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address Edward T. Loomis, Bainbridge, N. Y., R. D. 4.

*No. 199 — Farm of 39 acres, located 1 mile from Oxford P. O., R. D.; $1\frac{1}{2}$ miles from railway station at Oxford, on line of D., L. & W. R. R.; 1 mile from school, and Congregational, Methodist, Baptist, Catholic and Episcopal churches; $1\frac{1}{4}$ miles from milk station. State road. Nearest large village, Oxford, population 1,600, 1 mile distant, reached by highway. Surface, part level, part slightly rolling. Soil, sandy loam. Acres in meadow, 20; in natural pasture, 18; in timber, 1; acres tillable, 20. Fruit, 25 apple trees in bearing, 2 pear trees, 2 plum trees. Best adapted to corn, potatoes, oats, vegetables, hay and pasturage. Fences, board, wire and stone walls. House, $1\frac{1}{2}$ stories, 7 rooms, cellar, in good condition. Three small barns, in good condition. Watered, house and barn, by running water; fields, by springs. One mile from Chenango River. There are 25 sugar maple trees on this farm. This farm is a fine poultry and truck farm, pleasantly located, good view. Occupied by owner. Reason for selling, advanced age of owner. Price, \$2,700. Terms, \$1,000 cash, balance on time. Address C. O. Gale, agent, Oxford, N. Y.

*No. 200 — Farm of $183\frac{1}{2}$ acres, located $3\frac{1}{2}$ miles from Oxford, on R. D.; $3\frac{1}{2}$ miles from railway station at Oxford, on line of D., L. & W. and O. & W. R. R.; $\frac{1}{2}$ mile from school; $3\frac{1}{2}$ miles from churches of all denominations, butter factory and milk station. Highways, good. Nearest large village, Oxford, population 1,600, $3\frac{1}{2}$ miles distant, reached by highway. Surface of farm, rolling. Soil, sandy loam, fertile. Acres in meadow, 50; in natural pasture, 100; in timber, 33, oak, hemlock, chestnut. Fruit, enough apples for home use. Best adapted to grain, potatoes, hay, pasturage; excellent dairy farm. Fences, mostly wire, in good condition. House, 2 stories, 14 rooms, painted, cellar flagged, in good condition. Ample

barn room for stock and hay, henhouse and granary. Watered, house and barn, by running water; fields, by springs. One mile from Chenango River. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$5,500. Terms, \$2,000 cash, balance for term of years. Address C. O. Gale, agent, Oxford, N. Y.

*No. 201 — Place of 4 acres, located in Oxford village, $\frac{1}{2}$ mile from railway station at Oxford, on line of D., L. & W. R. R.; $\frac{1}{4}$ mile from school, Methodist Episcopal, Congregational, Baptist, Episcopal and Catholic churches and from milk station. Three acres river bottom, very fertile. Soil, sandy loam, black. Acres in meadow, 3; acres tillable, 4. Fruit, 4 pear trees, 6 plum trees, 1 cherry tree. Best adapted to vegetables and garden truck. Fences in good condition. House, 2 stories, 12 rooms, bath, furnace, good cellar, painted and nearly new. Barn, 30x30, room for horse, cow, wagons and hay, painted and nearly new; large henhouse. Watered, house and barn, by city water; fields, by river. Chenango River borders farm. Located near basket factory, employing 75 hands; good place to take boarders. Occupied by tenant. Reason for selling, widow must sell to close business. Price, \$2,800. Terms, \$1,300 cash, balance on time. Address C. O. Gale, agent, Oxford, N. Y.

*No. 202 — Farm of 120 acres, located $1\frac{1}{4}$ miles from Union Valley P. O.; 5 miles from railway station at Bainbridge, on line of D. & H. R. R.; $\frac{1}{4}$ mile from school; 5 miles from churches of all denominations; 5 miles from milk station. Highway, good. Nearest village, Bainbridge, population 1,200, distant 5 miles, reached by highway. Surface of farm, rolling. Soil, productive. Acres in meadow, 40; in natural pasture, 60; in timber, 20, hard wood, maple and beech; acres tillable, 50. Fruit, 60 apple, 6 pear and 3 cherry trees. Best adapted to corn, potatoes, oats, hay and pasturage. Fences, wire, in good condition. House, 2 stories, 14 rooms and cellar, in good condition. Barn, 40x60; silo; cornhouse; henhouse; wagonhouse; shop. Watered, house and barn, by running water; fields, by springs and creek. One and one-half miles from Brocket Lake. Occupied by owner. Reason for selling, owner has other business. Sugar

* Farm is in hands of agent or real estate dealer.

bush of 300 to 400 trees, sap buckets and all farm tools included. Price, \$3,800. Terms, \$1,800 cash, balance on time. Address C. O. Gale, agent, Oxford, N. Y.

*No. 203 — Place of $\frac{1}{2}$ acre, located 2 miles from Oxford P. O., R. D. 4; 2 miles from railway station at Oxford, on line of D. L. & W. R. R.; $\frac{1}{2}$ mile from school; 2 miles from Protestant and Catholic churches; 2 miles from butter factory and milk station. State road. Surface of farm level. Altitude about 1,400 feet. Soil, sandy loam. All tillable. Fruit, 2 apple trees. Fences in good condition. House, $1\frac{1}{2}$ stories, good condition, 8 rooms. Outbuildings, barn, 18×25 , and henhouse, fair condition. Watered by well. Occupied by owner. Reason for selling, advanced age of owner. Price, \$600. Terms, \$350 cash, balance on mortgage at 5%. Address C. O. Gale, agent, Oxford, N. Y.

*No. 204 — Farm of 128 acres, located 3 miles from East Coventry P. O.; 5 miles from railway station at Oxford, on line of D. L. & W. R. R.; $\frac{1}{2}$ mile from school; 1 mile from Baptist church; 5 miles from butter factory and milk station. Highways good. Surface of farm slightly rolling. Altitude about 1,600 feet. Soil, rich loam. Acres in meadow, 40; in natural pasture, 60; in timber, 28, beech, maple and birch. Acres tillable, 50. Fruit, 100 apple and 4 plum trees. Best adapted to corn, potatoes, oats and hay. Fences mostly wire. House, 2 stories, 10 rooms, good condition. Outbuildings, barn, 32×72 , nearly new, henhouse, hoghouse, milkhouse and smokehouse. Watered, house and barn by running water, fields by never-failing creek. This farm is 2 miles from Brocket Lake. Occupied by tenant. Reason for selling, owner lives too far away to attend to farm. Price, \$3,300, three cows included. Terms, \$1,100 cash, balance on mortgage at 5%. Address C. O. Gale, agent, Oxford, N. Y.

*No. 205 — Farm of 204 acres, located $\frac{1}{2}$ mile from Tyner P. O., R. D. 1, from Oxford, $3\frac{1}{2}$ miles from railway station at Oxford, on line of D. L. & W. R. R.; $\frac{1}{2}$ mile from school, churches, butter factory and cheese factory; $3\frac{1}{2}$ miles from milk station. Highways somewhat hilly but good. Surface of farm slightly rolling. Altitude about 1,500 feet. Soil, clay loam. Acres in meadow, 75; in nat-

ural pasture, 85; in timber, 50. Acres tillable, 75. Fruit, 60 apple, 5 pear, 1 plum tree, also one grape vine. Best adapted to corn, potatoes, oats and hay. Fences, wire and stone, good condition. House, 2 stories, 16 rooms, large enough for two families. Outbuildings, fine basement barn, 36×90 , nearly new, carriage house, granary, etc. Watered, house by well; barn by spring; fields by spring. Occupied by owner. Reason for selling, ill health of owner. Price, \$6,000. Terms, \$2,000 cash, balance on easy terms at 5%. Address C. O. Gale, agent, Oxford, N. Y.

*No. 206 — Farm of $5\frac{1}{2}$ acres, located $\frac{1}{2}$ mile from village of Oxford, R. D. 1; $\frac{1}{4}$ mile from railway station at Oxford, on line of O. & W. R. R.; $\frac{1}{2}$ mile from school and churches; 1 mile from butter factory and milk station. Highways good. Surface of farm rolling. Altitude about 1,500 feet. Soil, sandy loam. Acres in meadow, 3; in natural pasture, 2. Acres tillable, 4. Fruit, 30 apple, 10 plum trees. Six butternut trees in bearing. Best adapted to truck gardening and poultry raising. Fences, stone and wire. House, $1\frac{1}{2}$ stories, 9 rooms, good condition. Outbuildings, barn, 20×30 , two good henhouses, large enough for 500 hens. Watered, house and barn by running water, fields by springs. Chenango River is $\frac{1}{4}$ mile from farm. Occupied by owner. Reason for selling, advanced age of owner. Price, \$1,800. Terms, \$750 cash, balance on easy terms. Address C. O. Gale, agent, Oxford, N. Y.

TOWN OF PHARSALIA

Population 657

No. 207 — Farm of 146 acres, located 3 miles from Pharsalia P. O.; 12 miles from railway station at Norwich; 2 miles from 3 churches; 3 miles from butter factory and cheese factory; 12 miles from milk station and condensing plant. Highways, 3 miles hilly, 9 miles good. Nearest village, Norwich, population 8,000, 12 miles distant, reached by highway. Surface of farm, level. Soil, clay and stony. Acres in meadow, 50; in natural pasture, 70; in timber, 26; acres tillable, 70. Fruit, 25 apple trees, grafted, 25 common fruit trees. Best adapted to corn, oats and potatoes. Fences, wire and wall, in fair condition. House, 9 rooms, in fair condition. Horse barn, 30×40 ; cow barn, 36×40 ; 2 stables;

* Farm is in hands of agent or real estate dealer.

cornerib; shop; all in good condition. Watered, house, by well; fields, by spring. Occupied by tenant; lease expires March 1, 1912. Reason for selling, death of former owner. Address Herbert Coy, East Pharsalia, N. Y. Owner will rent.

*No. 208 — Farm of 188 acres, located $\frac{3}{4}$ mile from Pharsalia P. O.; 10 miles from railway station at Norwich, on line of D. L. & W. R. R.; $\frac{1}{4}$ mile from school; 1 mile from Protestant churches; $\frac{3}{4}$ mile from butter factory and cheese factory. Highways good. Surface of farm slightly rolling. Altitude about 1,500 feet. Soil, rich, clay loam. Acres in meadow, 60; in natural pasture, 80; in timber, 50, sugar maples and beech. Acres tillable, 60. Fruit, 30 apple, 2 pear, 2 plum and 3 cherry trees. Best adapted to corn, potatoes, oats, hay, etc. Fences, stone, wire and board. House, 2 stories, 9 rooms, nearly new. Out-buildings, new basement barn, 36x70, horse and carriage barn, 30x40, in good condition. Watered, house and barn by running water, fields by springs and creek. Occupied by owner. Reason for selling, owner wishes to join relatives in the West. Price, \$4,200. Terms, \$1,800 cash, balance on mortgage at 5%. Sap evaporator, storage tanks and 450 buckets included. Address C. O. Gale, agent Oxford, N. Y.

TOWN OF PRESTON

Population 649

No. 209—Farm of 224 acres, 4 miles from post-office and railway station; 1 mile from school and church; R. D. 2 from Oxford. Highways, always open. Nearest village, Oxford, population 1,600, distant 4 miles, reached by highway. Occupied by owner. Surface of farm, slightly hilly. Soil, very fertile and good. Acres in meadow, 80; in pasture, 80; in timber, 64, maple sugar bush, beech and pine; acres tillable, 140. Fruit, 20 or 30 apple trees, mostly Baldwins. Best adapted to grass, corn, oats and potatoes. Fences, stone wall and wire. House, $1\frac{1}{2}$ story, with ell, in good condition. Barns, 2, large, in good condition, 1 nearly new. Watered, house and barns, running water. New silo. Milk from this farm is taken to the Borden plant at Oxford. Price, \$21 per acre. Name and address of owner, Charles S. Roe, Oxford, N. Y., R. D. 2.

*No. 210 — Farm of 184 acres, located $2\frac{1}{2}$ miles from Oxford P. O.; $2\frac{1}{2}$ miles from railway station at Oxford, on line of D., L. & W. R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from Methodist Episcopal, Episcopal, Baptist, Congregational and Catholic churches; $2\frac{1}{2}$ miles from milk station. Highways, good, mostly State roads. Nearest large village, Oxford, population 1,600, distant $2\frac{1}{2}$ miles, reached by State road. Surface of farm, rolling, flat meadows. Soil, rich, gravelly loam. Acres in meadow, 50; in natural pasture, 85; in timber, 50, maple, beech, birch; acres tillable, 50. Fruit, apples enough for home use. Best adapted to corn, potatoes, oats, hay, grain and buckwheat. Fences, wire and stone. House, 2 stories, 12 rooms, painted, in good condition. Ample barn-room, in good repair, horsebarn, hog-pen, henhouse, cornhouse. Watered, house and barn, by running water; fields, by spring and creek; $2\frac{1}{2}$ miles from Chenango River. This is a good dairy farm, well watered by springs. Reason for selling, owner has other business. Price, \$5,000. Terms, \$1,400 cash, balance on time. Address C. O. Gale, agent, Oxford, N. Y.

*No. 211 — Farm of 210 acres, located 3 miles from Oxford P. O.; 3 miles from railway station at Oxford, on line of D., L. & W. R. R.; $1\frac{1}{4}$ miles from school; 3 miles from Methodist, Baptist, Episcopal and Congregational churches; 3 miles from milk station. Highways, some hills, but good. Nearest large village, Oxford, population 1,600, 3 miles distant, reached by highway. Surface rolling, meadows smooth and easily tilled. Soil, clay loam. Acres in meadow, 50; in natural pasture, 110; in timber, 50, mostly hard wood, maple and beech; acres tillable, 110. Fruit, 25 apple trees, 3 pear trees. Best adapted to potatoes, oats, corn and buckwheat. Fences, wire and stone, in good condition. House, 2 stories, 10 rooms, nearly new. Basement barn, 36x40, in good condition; hoghouse; henhouse; ice-house; shed for sheep, 14x50. Watered, house and barn, by well; fields, by springs and creek. Fine locust grove about the house; a healthful location and pleasant. Farming tools included. Occupied by tenant. Reason for selling, owner has other business. Price, \$4,500. Terms, \$1,500 cash, balance on mort-

* Farm is in hands of agent or real estate dealer.

gage. Address C. O. Gale, agent, Oxford, N. Y.

*No. 212 — Farm of 10 acres, located $2\frac{1}{2}$ miles from Oxford P. O., R. D. 2; $2\frac{1}{2}$ miles from railway station at Oxford, on line of D., L. & W. R. R.; $\frac{1}{2}$ mile from school; 2 miles from churches; $2\frac{1}{2}$ miles from butter factory and milk station. State road. Surface of farm, nearly level, creek bottom. Altitude, about 1,400 feet. Soil, sandy loam. Acres in meadow, 6; in natural pasture, 4; acres tillable, 8. Fruit, 30 trees. Adapted to truck gardening and fruit. Fences, wire. House, $1\frac{1}{2}$ stories, 9 rooms, fair condition. Outbuildings, new barn, henhouse. Watered, house by well; barn and fields, by creek. Occupied by owner. Reason for selling, owner lives too far away to attend to farm. Price, \$1,400. Terms, \$1,000 cash, balance on mortgage at 5 per cent. Address C. O. Gale, agent, Oxford, N. Y.

TOWN OF SHERBURNE

Population 2,695

No. 213 — Farm of 273 acres, located 2 miles from Earlville P. O. and $1\frac{1}{2}$ miles from Earlville station, on line of D., L. & W. R. R.; 1 mile from school; 2 miles from Protestant churches; 4 miles from Catholic church; 2 miles from milk station; 3 miles from condensing plant. Highways, good. State road $\frac{1}{2}$ mile from farm. Village of Sherburne 4 miles from farm and village of Earlville 2 miles, reached by highway. Surface, rolling high land. Altitude, 1,500 feet. This farm is divided the same as the usual dairy farm, as to acres of meadow and pasture, etc.; has timber sufficient for farm purposes. Has apple orchard of about 50 trees. Land is best adapted to dairy farming, hops and potatoes. Fences, in good condition. One house in good condition, one house in poor condition, but worth repairing. Has large basement barn in good condition, good horsebarn and other buildings. House watered from running brook; barns, by springs and brook. The Chenango River is $1\frac{1}{2}$ miles distant. Occupied by tenant. This farm cost present owner \$13,500. Reason for selling, to close an estate. Price, \$7,500. Terms, small payment down, about \$2,000, balance on easy terms. Will rent for cash or with option to buy.

Address Howard D. Newton, executor, Norwich, Chenango County, N. Y.

TOWN OF SMITHVILLE

Population 949

*No. 214 — Farm of 100 acres, located $1\frac{1}{2}$ miles from Tyner P. O., R. D.; $5\frac{1}{2}$ miles from railway station at Oxford, on line of D., L. & W. R. R.; $1\frac{1}{2}$ miles from school and Universalist and Baptist churches; $1\frac{1}{2}$ miles from butter factory; $5\frac{1}{2}$ miles from milk station. Highways, some hills, but good. Nearest large village, Oxford, population 1,600, $5\frac{1}{2}$ miles distant, reached by highway. Surface, rolling, some level. Soil, good, rich clay loam. Acres in meadow, 40; in natural pasture, 55; in timber, 5, maple and beech; acres tillable, 40. Fruit, 50 apple trees in bearing. Best adapted to corn, potatoes, grain, grass and pasturage. Fences, mostly wire, in good condition. House, 2 stories, 9 rooms, good cellar, painted. Barns: one, 32x50; another, 26x30, and silo, barn clapboarded. Watered, house and barn, by running water; fields, by springs. Good productive farm in a fine dairy farming section. Will keep 15 to 20 head of stock and team. Occupied by owner; lease expires March 1, 1912. Reason for selling, owner lives at a distance. Price, \$3,000. Terms, \$1,300 cash, balance can remain on mortgage. Address C. O. Gale, agent, Oxford, N. Y.

*No. 215 — Farm of 90 acres, located $1\frac{1}{4}$ miles from Smithville Flats P. O.; 5 miles from railway station at Greene, on line of D., L. & W. R. R.; 1 mile from school; $1\frac{1}{4}$ miles from Presbyterian, Universalist, Methodist and Episcopal churches; $1\frac{1}{4}$ miles from butter factory; 5 miles from milk station. Nearest large village, Greene, population 1,300, 5 miles distant, reached by highway. Surface, rolling, nearly level, meadows smooth and easily cultivated. Soil, loam, fertile. Acres in meadow, 40; in natural pasture, 45; in timber, 5, hard wood; acres tillable, 40. Fruit, 50 apple trees, 3 pear trees, 4 plum trees, 2 cherry trees, black and red raspberries. Best adapted to hay, grain, potatoes, buckwheat and pasturage. Fences, mostly wire, in good condition. House, 2 stories, 15 rooms and cellar, in good condition. Barn, 34x50, in fair condition, basement for stock; cornhouse; pigpen. Watered, house, by good well;

* Farm is in hands of agent or real estate dealer.

barn and fields, by spring. Pleasantly situated in fine farming section, convenient to town and railroad. Occupied by owner. Reason for selling, advanced age of owner. Price, \$2,200, including 25 hens, 3 cows, new plow and harrow. Terms, \$1,200 cash. Address C. O. Gale, agent, Oxford, N. Y.

*No. 216 — Farm of 191 acres, located 4 miles from Tyner P. O., R. D. 1, from Oxford; 8 miles from railway station at Oxford, on line of D., L. & W. R. R.; 1½ miles from school and butter factory; 4 miles from Protestant churches. Highways, good. Surface of farm, slightly rolling, smooth fields. Altitude, about 1,500 feet. Soil, rich loam. Acres in meadow, 60; in natural pasture, 80; in timber, 50, sugar maples, ash, etc; acres tillable, 75. Fruit, about 100 trees. Best adapted to hay, grain, potatoes, etc. Fences, wire, stone and board. House, 2 stories, 17 rooms, finished in oak, chestnut and cherry, fine condition. Outbuildings, basement barn, 36x116, with silo, henhouse, hoghouse and sugar house. Watered, house and barn by running water; fields, by spring and creek. This farm is one mile from Ludlow Lake. Occupied by owner. Reason for selling, ill health of owner. Price, \$7,000. Terms, \$2,500, balance on mortgage at 5 per cent. Champion evaporator, 7 calves and 5 tons of hay included. Address C. O. Gale, agent, Oxford, N. Y.

*No. 217 — Farm of 399 acres, located 4 miles from Tyner P. O., R. D. 1, from Greene; 8 miles from railway station at Greene, on line of D., L. & W. R. R.; 1 mile from school; 3 miles from Protestant churches; 2 miles from butter factory and cheese factory. Highways, good. Surface of farm, rolling, smooth fields. Altitude, about 1,500 feet. Soil, loam, fertile. Acres in meadow, 150; in natural pasture, 150; in timber, 95, pine, hemlock and maple; acres tillable, 150. Some fruit. Best adapted to corn, potatoes, oats and hay. Fences, mostly wire, good condition. House, 1½ stories, fair condition. Outbuildings, barn, 34x70, horse barn and hay barn. Watered, house by good well; barns, by spring; fields, by spring and creek. Occupied by tenant. Reason for selling, owner a

widow and cannot attend to property. Large amount of valuable timber on this place. Price, \$10,000. Terms, \$4,000 cash, balance on mortgage at 5 per cent. Address C. O. Gale, agent, Oxford, N. Y.

*No. 218 — Farm of 65 acres, located 4 miles from Tyner P. O., R. D. 1; 7 miles from railway station at Greene, on line of D., L. & W. R. R.; ½ mile from school, butter factory and cheese factory, 1½ miles from Protestant church; 7 miles from milk station. Highways in good condition. Surface of farm, rolling, smooth fields. Altitude, about 1,500 feet. Soil, clay loam. Acres in meadow, 25; in natural pasture, 30; in timber, 10, 300 sugar maples; acres tillable, 30. Fruit, apples, pears, plums, cherries, grapes and berries. Fences, wire and stone. House, 1½ stories, 8 rooms, good condition. Outbuildings, barn, 36x50; good basement for stock, wagons, etc., haybarn, granary and fine henhouse. Watered, house by well; barns, by creek; fields, by springs and creek. Occupied by owner. Price, \$2,500. Terms, \$1,200 cash, balance on mortgage at 5 per cent. Address C. O. Gale, agent, Oxford, N. Y. A cow and 50 hens included in above price.

*No. 219 — Farm of 93 acres, located 1¼ miles from Tyner P. O.; 5½ miles from railway station at Oxford, on line of D., L. & W. R. R.; 1¼ miles from school, churches and butter factory; 5½ miles from milk station. Highways, good. Surface of farm slightly rolling. Altitude, about 1,500 feet. Soil, loam. Acres in meadow, 35; in natural pasture, 40; in timber, 8, hard wood; acres tillable, 35. Fruit, 30 apple and 2 pear trees, also one grape vine. Best adapted to corn, potatoes, oats, hay, etc. Fences, mostly wire. House, 2 stories, 12 rooms, good condition. Outbuildings, barn, 30x70; good basement. Watered, house and barn by running water; fields, by spring and creek. Occupied by tenant. Reason for selling, advanced age of owner who has other business. Price, \$3,200. Terms, \$1,200 cash, remainder on mortgage at 5 per cent. Address C. O. Gale, agent, Oxford, N. Y.

*Farm is in hands of agent or real estate dealer.

CLINTON COUNTY

Area, 1,092 square miles. Population, 48,230. Annual precipitation, 42.47 inches. Annual mean temperature, 46.8°. Number of farms, 3,608. County seat, Plattsburg.

This county lies in the northeast corner of the state, bounded on the eastern side by Lake Champlain.

The surface is generally hilly and broken, and in the southern and western parts mountainous. The county is rich in deposits of magnetic iron ore of the best quality. A part of the central and western portions of the county is covered by the original forests. Along the lake shore the surface is level or moderately uneven. Drift deposits in the northern and eastern parts are abundant, also peat bogs.

The soil is a clay and sandy loam and many fine farms are found in this county. The chief rivers of the county are Ausable, Little Sable, Salmon, Saranac, Little Chazy, Great Chazy and the English. Upon all of these rivers and streams are numerous falls furnishing an immense amount of water power. In the western wilderness portion are many famous lakes, the principal of which are the Chateaugay, Chazy, Sampson and Taylor. This section is a great resort for hunters, game and fish being found in abundance. Plattsburg, the county seat, has a population of 11,000, and furnishes a good local market. The United States military post is located at Plattsburg and the Dannemora State Prison is located in the county. There is a large business carried on in lumbering, mining, iron making and for the area covered a remarkable showing in agriculture. There are great possibilities for apple growing in this county along the east lake shore. The principal agricultural products are as follows: corn, 154,628 bushels; oats, 643,439 bushels; barley, 32,855 bushels; buckwheat, 102,833 bushels; potatoes, 1,325,041 bushels; hay and forage, 103,362 tons. The value of all farm property is \$18,116,645, showing a remarkable increase of 50.3 per cent. over the value in 1900. The average value of unimproved land is \$3.40 per acre. Number of dairy cows reported, 25,032; horses, 10,415; swine, 11,563; sheep, 11,069; poultry, 98,617. The total milk production was 10,188,024 gallons. The receipts from sale of dairy products was \$779,834. The average price of improved farm land, including buildings, \$31.37 per acre. There are 185 district schools, several excellent high schools and a State Normal College located at Plattsburg. Churches of all denominations are located in the villages and county districts. There are thirteen agricultural organizations, namely: one county fair association, eleven granges, one Pomona grange; 64 miles of state and county roads and 947 miles of other improved highways. The D. & H. railroad traverses the eastern boundary of the state and extends through other portions of the county, giving unusual facilities in connection with the water transportation of the lake, for the products that are grown, manufactured or mined in the county.

TOWN OF AUSABLE

Population 2,045

No. 220 — Farm of 135 acres, 1 mile from Arnold station; 2 miles from Clintonville P. O. Loamy soil, adapted to general farming. Fine scenery. Good trout fishing. Deer and other game. Watered by springs. Well fenced. Forty-five acres timber, balance meadow and pasture. Good orchard. Two-story frame house of 10 rooms, in fine repair. Water and bathroom in house. Large barn, stable and outbuildings, all in good condition. This farm would make a good poultry farm. Near a good market. Reason for selling, advanced age of owner. Price, \$3,000. Easy terms. Name and address of owner, John Patterson, Clintonville, N. Y.

TOWN OF BEEKMANTOWN

Population 1,866

No. 221 — Farm of 170 acres, 2 miles from Beekmantown station; 5 miles from Plattsburg, R. D. Farm known as Captain Mooney Homestead; cost \$16,500 twenty years ago. Soil, very productive, adapted to all crops. Two-story frame house, slate roof, 8 rooms, verandas on both sides of house; good cistern and cellar and all conveniences. Large barns and outbuildings, including silo, all in good condition. Watered by wells, springs and Lake Champlain. Hoghouse and hennery, two storehouses, good orchard, two tenant houses. This farm has lake front and is ½ mile from school and near three churches. This would make an excellent dairy farm.

Price, \$12,000. Terms easy. Name and address of owner, N. H. Mooney, Plattsburg, N. Y., R. D. 2.

No. 222 — Farm of 139 acres, located 2 miles from West Chazy P. O., R. D. 3; 2 miles from railway station at Beekmantown, on line of D. & H. R. R.; $\frac{1}{4}$ mile from school; $\frac{1}{2}$ mile from Methodist church; 2 miles from Catholic church; $\frac{1}{2}$ mile from butter factory and milk station. Highways, good. $\frac{1}{2}$ mile from macadamized road. Nearest city Plattsburg, population 11,138, 6 miles distant, reached by rail and highway. Surface of farm, level. Soil, sandy loam and muck. Acres in meadow, 20; in natural pasture, 40; in timber, 15, second growth, hardwood and cedar; acres tillable, 80. Fruit, 480 apple trees, 100 Macintosh, 4 years old, and other choice varieties. Adapted to all crops grown in this climate. Fences, rail and wire, in good condition. House, 26x30, wood, newly painted and shingled, kitchen, brick, 16x20, woodshed, 20x26, in good condition. Barns all new and painted; hay barn, 40x20; cow barn, 40x26; horse barn, 26x30; tool shed, 30x16; barns have cement floors, swing stanchions for 26 head. House, barns and fields watered by wells; pump in house. Five miles from Lake Champlain. A very nice home, house papered and painted inside this year; everything in first-class condition. Occupied by tenant. Reason for selling, poor health of owner. Price, \$5,000. Terms, part cash, balance at 6%. Address Philip M. O'Neill, Fort Ethan Allen, Vt. Owner will rent.

No. 223 — Farm of 125 acres, located 3 miles from Plattsburg P. O., R. D. 5; $1\frac{1}{2}$ miles from railway station at Beekmantown, on line of D. & H. R. R.; $\frac{1}{4}$ mile from school; 3 miles from churches, butter factory and cheese factory; 2 miles from milk station. Highways, 2 State and 1 country road. Surface of farm rolling. Soil, muck and gravel. Acres in meadow, 50; in natural pasture, 30; in timber, 15, maple and cedar. Acres tillable, 80. Fruit, 200 apple trees. Best adapted to corn, clover, alfalfa and general crops. Fences, wire and rail, fair condition. House, 12 rooms, brick, fair condition. Outbuildings, 7 barns. Watered, house by well and cistern, barns and fields by spring. This farm is 3 miles from Lake Champlain. Occupied by owner. Reason for selling, owner wishes to retire from business. Price, \$5,000. Terms, \$2,500 cash, balance to

suit buyer. Address Frank A. Wolcott, Plattsburg, N. Y., R. D. 5.

TOWN OF CHAZY

Population 2,973

No. 224 — Farm of 340 acres, $4\frac{1}{2}$ miles from railway station at Chazy, on line of D. & H. R. R.; schoolhouse on farm; R. D. 1; $4\frac{1}{2}$ miles from churches; 12 miles from condensing plant. Highways, good. Nearest city, Plattsburg, population 11,138, 10 miles distant. Surface, level and rolling. Soil, clay loam with limestone. Acres in meadow, 200; natural pasture, 140; acres tillable, 200. Over 12 acres of orchard, set 26 years, in full bearing; maple orchard. Best adapted to corn and clover. Fences, rail and wire, in good condition. House, 40x32, brick, good condition; cooler and milkhouse attached; 2 tenant houses. Outbuildings: summer stable, capacity 50 cows; main winter stable, 175x30, concrete; King system ventilator; 300-ton silo. Watered, house, by cistern and spring; barns and fields, by springs and windmill. One hundred and twenty rods frontage on Lake Champlain. Three fishing grounds. Four-acre point and site for a dock, with harbor included. Occupied by owner. Reasons for selling, advanced age of owner. House faces east. Price, \$75 per acre. Terms, $\frac{1}{2}$ cash, balance can be arranged by mortgage. Owner will rent on shares, or with option to buy. Address Seth Gordon, Chazy, Clinton Co., N. Y.

TOWN OF CLINTON

Population 1,598

No. 225 — Farm of 75 acres, located $1\frac{1}{2}$ miles from Churubusco P. O., R. D. 1, and railway station, on line of Rutland R. R.; 1 mile from school; $1\frac{1}{2}$ miles from Catholic and Methodist churches, $1\frac{1}{2}$ miles from butter factory; 1 mile from milk station. Highways, gravel, level. Surface of farm undulating. Altitude about 1,200 feet. Soil, loam. Acres in meadow, 30; in natural pasture, 25; in timber, 20, maple and beech. All tillable except woodland. Best adapted to potatoes, corn and oats. Fences, wire, fair. House, log, old, can be rebuilt. Outbuildings in poor condition. Watered, house and barn by well, fields by spring. This farm is about 10 miles from Adirondack Mountains. Occupied by tenant. Reason for selling, owner lives in Missouri. Price, \$2,000. Terms, one-half down, balance \$100 per year. Address Patrick Bray, Kansas City, Mo. Owner will rent for \$100 per year.

COLUMBIA COUNTY

Area, 688 square miles. Population, 43,658. Annual precipitation, 46 inches. Annual mean temperature, 50°. Number of farms, 2,963. County seat, Hudson. Average price of farm land per acre, \$42.60. This is an increase of 31.6 per cent. in ten years.

This county lies on the east shore of the upper Hudson and extends east to the line of Massachusetts. The Taghkanick Mountain extends along the east border and the adjoining parts of the county are broken by irregular ranges of hills which constitute the outlying spurs of these mountains. The western portion of the county spreads out in an undulating plateau terminating in the bluffs of the Hudson River. The principal streams are the Jansenkil, Claverack, and Kinderhook Creeks. These streams and their tributaries have valuable water powers and prosperous mills are located on them. In the northern portion of the county are numerous lakes and ponds all well stocked with fish. Thermal and mineral springs are found in places, the former, quite celebrated, located at New Lebanon. The various branches of agriculture form the leading industrial pursuits of the people. At the same time there are manufactured to a large extent paper and cotton fabrics, vegetable extracts and iron. The county is most favorably situated for commerce, as the largest ships can dock at Hudson. The principal crops are: corn, 410,576 bushels; oats, 503,088 bushels; buckwheat, 81,073 bushels; rye, 230,195 bushels; potatoes, 232,702 bushels; hay and forage, 89,208 tons. Columbia County ranks first in the production of rye and the demand for rye straw in New York City, together with the cheapness of transportation makes this product almost as valuable as the grain itself. The live stock of the county is classified as follows: dairy cows, 16,136; horses, 9,150; swine, 13,091; sheep, 25,229; poultry, 172,879; production of milk, 7,772,732 gallons. Receipts from sale of dairy products was \$714,274. This county is a choice location for the raising of apples and other orchard fruits.

The soil survey recently made by the United States government affirms that the county has a soil and climate equal to any portions of the state for orcharding. Railway and electric lines, together with good roads, make ample facilities for shipping products. There are 150 district schools; churches of all denominations are established in the villages and through the rural sections. There are twenty agricultural organizations established in the county. The total valuation of farm property is \$19,819,369, an increase of 31.6 per cent. in ten years. The prosperity of the farmers in this county is noted by an increase of nearly \$2,500,000 in the value of farm buildings alone.

TOWN OF ANCRAM

Population 1,137

No. 226 — Farm of 245 acres, located 2 miles from Mt. Riga P. O.; 1 mile from railway station at Halstead; 2 miles from railway station at Mount Riga, on line of C. N. E. R. R.; 2½ miles from railway station at Boston Corners, on line of Harlem Division, N. Y. C. & H. R. R. R.; 1 mile from school and church; 2½ miles from milk station. Highways, somewhat hilly but good. Nearest large village, Millerton, population about 858, about 6 miles distant, reached by rail and highway. Soil, clay loam. Acres in meadow, about 75; in natural pasture, 75 to 100; in timber, about 40, mostly second growth chestnut and oak, good size; acres tillable, 150. Fruit, apples and some small fruit. Best adapted to grass. Fences, stone wall and rail, wire, fair condition. House, 8 rooms, 22x28, good condition. Outbuildings: horse

barn and wagon house, 30x20, hayloft overhead; barn, 30x44, deep bay on one side of main floor, stables with 18 stanchions in basement; woodhouse, 12x13; hoghouse; all in fair condition. Watered by cistern and springs. Occupied by tenant. Reason for selling, owner living elsewhere. Price, \$4,000. Terms, \$1,000 cash, and mortgage for balance for 5 years at 5%. Owner will rent for cash. Address Calvin S. McChesney, Rooms 411-415 Cannon Place, Troy, N. Y.

*No. 227 — Place of 6 acres, located 1 mile from Copake P. O., 1½ miles from railway station at Copake, on line of Harlem Ry.; ¾ mile from school; 1½ miles from Dutch Reformed Church; 1½ miles from milk station. Highways good. Nearest city, Hudson, 15 miles distant, reached by rail. Surface of farm rolling. Altitude about 850 feet. Fruit, 25 apple trees. House, 18x24, 1½

* Farm is in hands of agent or real estate dealer.

stories, 5 rooms, piazza, 6x15, first-class condition. Large barn in good condition. Watered by well. Small lake joins farm, frontage 1,000 feet. Occupied by owner. Reason for selling, owner has other business. Price, \$1,750. Address Herbert Eggleston, agent, Millerton, N. Y.

*No. 228 — Farm of 260 acres, located 2½ miles from Boston Corners P. O. and railway station, on line of Harlem Ry.; 1 mile from school; 3 miles from Protestant churches; 2½ miles from milk station. Highways good. Nearest village, Copake, population about 600, 2½ miles distant, reached by highway. Surface of farm rolling. Soil, limestone. Acres tillable, 200. Fruit, 75 apple, 10 pear and 10 cherry trees. Best adapted to grass, oats, corn, etc. Fences, rail and wire, good condition. House, 18x40, 13 rooms, good condition. Outbuildings, barn, 34x66; barn, 28x42; hogpen, 20x40; henhouse, 16x24; machine barn, 22x50; icehouse, 16x24; woodhouse, workshop, room for 10 horses, 42 cows, buildings in good condition. Watered, house by well, barn by windmill, fields by streams. River runs through farm. Reason for selling, owner in other business. Price, \$10,000. Terms, \$3,000. Address Herbert Eggleston, agent, Millerton, N. Y.

TOWN OF AUSTERLITZ

Population 811

No. 229 — Farm of 163 acres, situated 2½ miles from Ghent and Chatham P. O.; 2½ miles from railway station on Boston and Harlem Division of N. Y. C. R. R.; 2½ miles from church; 1½ miles from school and butter factory; 1½ miles from Borden's condensing plant. Occupied by tenant. Rolling surface. Black loam soil. Fruit, apples, pears, peaches and plums. Best adapted to hay, grain, corn and potatoes. Fences, rail and wire. Two-story large frame house, in good condition. Two-story barn. Watered by well and springs. Reason for selling, death of owner. Price, \$6,800. Terms, ½ down, balance on bond and mortgage at 5%. Address Mrs. Anna B. Stupplebeen, 17 Union Park Avenue, Jamaica, L. I. Owner will rent.

*No. 230 — Farm of 160 acres, located 3 miles from Chatham P. O. and railway station, on line of B. & A. Ry.; 1 mile

from school and church; ½ mile from butter factory; 3 miles from milk station. State road. Surface of farm nearly level. Altitude about 600 feet. Soil, loam. Acres in meadow, 100; in natural pasture, 30; in timber, 30. Acres tillable, 130. Some fruit. Best adapted to hay, grain, etc. Fences, wire and rail. House, 14 rooms, good condition. Outbuildings, 4 large barns, first-class condition. Watered, house by well, barn by running water, fields by springs. Occupied by owner. Reason for selling, advanced age of owner. Price, \$8,000. Terms, ½ down. Address S. N. Loomis, agent, Chatham, N. Y.

No. 231 — Farm of 165 acres, located 4 miles from Ghent P. O. and railway station, on Harlem Division N. Y. C. and branch of B. & A. R. R. Nearest large village, Chatham, 6 miles distant, population about 2,500, reached by highway and rail. Highways somewhat hilly but good. One mile from school; 2 miles from churches and creamery; 5 miles from milk shipping station. Acres in natural pasture, 60. Acres tillable, 130; acres in timber, 20, chestnut, oak and maple. Occupied by owner. Large house, main part 25x40, with wing 18x24, 14 rooms. Outbuildings, main barn, 45x60, stanchions for 18 cows, stalls for 6 horses; wagonhouse, 26x32; henhouse, 15x20; hogpen and cornerib 12x24, 2 stories; woodhouse, 15x20; shop, 12x14; all in good condition. Daily mail at door. Watered by springs, streams and wells. Adapted to dairying, fruit raising and general farming. Soil, clay subsoil, no gravel or swamps. Altitude about 88 feet. Fruit, 100 apple, 20 cherry, 20 pear and 75 plum trees, also ten large grape vines. Fences, mostly wire, good, some wall and rail. For price and terms address John Freehan, Ghent, N. Y., R. D. 2.

*No. 232 — Farm of 240 acres, located 1 mile from Austerlitz P. O., 3½ miles from railway station at State Line, on line of B. & A. Ry.; 1 mile from school and church. Highways good. Surface of farm rolling. Altitude about 99 feet. Soil, loam. Acres in meadow, 150; in natural pasture, 50; in timber, 40. Acres tillable, 100. Some fruit. Best adapted to hay. Fences, stone wall, rail and wire. House, 8 rooms, fair condition. Outbuildings, 3 barns, fair condition. Watered, house and barn by running

* Farm is in hands of agent or real estate dealer.

water, fields by springs. Occupied by owner. Reason for selling, advanced age of owner. Price, \$2,800. Terms, \$1,500 cash. Address S. N. Loomis, agent, Chatham, N. Y.

*No. 233 — Farm of 200 acres, located 1 mile from State Line P. O. and railway station, on line of B. & A. Ry.; 1 mile from school, church, butter factory and milk station. Highways, good. Surface of farm, rolling. Altitude, about 500 feet. Soil, heavy loam. Acres in meadow, 100; in natural pasture, 50; in timber, 50; acres tillable, 100. Large quantity of fruit of all kinds. Best adapted to hay. Large house, 14 rooms. Large barns in first-class condition. Watered by brook and spring. Occupied by owner. Reason for selling, owner wants smaller farm. Price, \$8,000. Terms, \$5,000 cash. Address S. N. Loomis, agent, Chatham, N. Y.

*No. 234 — Farm of 196 acres, located 1 mile from Austerlitz P. O.; 3 miles from railway station at State Line, on line of B. & A. R. R.; 1 mile from school and church. Highways, good. Surface of farm, rolling. Altitude, about 900 feet. Soil, loam. Acres in meadow, 40; in natural pasture, 100; in timber, 50; acres tillable, 100. Fruit, apples, pears and plums. House, 8 rooms, good condition. Two barns, fair condition. Watered by springs. Occupied by owner. Reason for selling, ill health of owner. Price, \$2,500. Terms, \$2,000 down. Address S. N. Loomis, agent, Chatham, N. Y.

TOWN OF CANAAN

Population 1,167

No. 235 — Farm of 180 acres, located 1 mile from E. Chatham P. O. and railway station, on line of B. & A. R. R.; 1 mile from school and churches, butter and cheese factory; 2 miles from milk station and condensing plant. Nearest city, Pittsfield, Mass., 16 miles distant; Albany, N. Y., 20 miles distant, reached by highway and rail. Surface, rolling and level. Soil, loam. Acres in natural pasture, 30; in timber, 60; acres tillable, 90. Plenty of apples, pears and plums; 38 peach trees. Adapted to all climatic crops. Fences, wire, stone, rail and board, fair condition. Ten-room house, in good condition. Watered, house, by well; barn, by

well; fields, by streams and springs. Occupied by owner. Reason for selling, owner in other business. Price, \$4,000. Terms on application. Address Mrs. Clara M. Wilcox, 410 West Street, Pittsfield, Mass.

No. 236 — Farm of 114 acres, located 1½ miles from Canaan P. O., R. D. 1, and railway station at Canaan, on line of B. & A. R. R.; ½ mile from school; 1½ miles from church; 3 miles from cheese factory. Highways, good. Nearest large village, Chatham, population 2,251, 8 miles distant, reached by railway and highway. Surface, hilly and rolling. Soil, slaty loam. Acres in meadow, 35; in natural pasture, 50; in timber, 15, pine, chestnut and oak; acres tillable, 50. About 65 fruit trees. Best adapted to corn, rye and oats. Fences, in poor condition. House, large enough for two families. Barn, 30x40, with stable attached and wagon house, in fair condition. Watered by well, brook and springs. Three miles from Queechy Lake. Not occupied. Price, \$2,000. Address Michael Mooney, East Chatham, N. Y. Owner will rent.

TOWN OF CHATHAM

Population 3,396

No. 237 — Foundry property, situated in the village of Old Chatham, ¼ acre of land; 500 feet from railroad station, on Rutland Railway. Buildings are 65x80 feet, divided into a large moulding room, stock room, flask room, machine shop, wood shop and boiler room. Equipped with 14-horse-power engine and boiler, blower, pulleys, shaftings, new belts, emery wheels and casting cleaner, together with a large assortment of flasks, moulding sand; every thing ready to start at a moment's notice. This plant is peculiarly adapted for a light manufacturing business, either as a foundry or other manufacturing enterprise. The buildings were thoroughly repaired and rebuilt last year and are practically all new. The last articles manufactured were chilled sleigh shoes. Reason for selling, to close an estate. Price, \$700, including equipment, site, building and small stocks of old iron. Would make good location for a shirt factory or barrel factory. Terms cash. Owner will rent. Address C. A. Hulbert, administrator, Old Chatham, N. Y.

* Farm is in hands of agent or real estate dealer.

*No. 238 — Farm of 51 acres, located $2\frac{1}{2}$ miles from Rayville P. O.; $2\frac{1}{2}$ miles from railway station at Rayville; $2\frac{1}{2}$ miles from school, churches of all denominations and from milk station. Highways, good. Nearest village, Chatham, population 2,251, 5 miles distant, reached by rail. Surface of farm, rolling. Slate soil. Acres in meadow, 35; in natural pasture, 10; in timber, 6; acres tillable, 45. Fruit, 75 apple, 10 pear, 30 plum, 24 peach, 25 cherry, 3 quince trees, also small fruits. Best adapted to fruit and grain. Fences in fair condition. House 18x26; ell, 10x26; $1\frac{1}{2}$ stories 9 rooms, piazza; tenant house, 7 rooms, all in good condition. Barn, 24x36; wagon house, 16x16; barn, 12x10; henhouse, 10x14; smokehouse; all in good condition. Watered, house, by cistern and well; barns, by springs; fields, by springs and stream. Occupied by owner. Reason for selling, owner desires to purchase a larger farm. Price, \$1,200. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address Herbert Eggles-ton, agent, Millerton, N. Y.

*No. 239 — Farm of 115 acres, located 1 mile from Chatham P. O.; 1 mile from railway station at Chatham, on line of B. & A. R. R.; 1 mile from school and 2 churches; $1\frac{1}{2}$ miles from milk station. Highways, good. Nearest large village, Chatham, population 2,251, 1 mile distant, reached by highway. Altitude, 600 feet. Surface of farm, rolling. Soil, deep loam. Acres in meadow, 40; in natural pasture, 10; in timber, 5, pine and hemlock; all tillable, except woodland. Best adapted to corn, oats and hay. Fences, in fair condition. House, 10 rooms, in good condition. Barn, 40x65, nearly new. Water piped to house; barns watered by brook; fields by springs. Near the Berkshires. Occupied by owner. Reason for selling, owner wishes smaller place. Price, \$6,000. Terms, $\frac{1}{2}$ cash. Address S. N. Loomis, agent, Chatham, N. Y.

No. 240 — Farm of 93 acres, located $1\frac{1}{2}$ miles from North Chatham P. O. and railway station, on line of Albany & Southern Ry.; 1 mile from school; $1\frac{1}{2}$ miles from churches. Highways, good. Nearest city, Albany, 15 miles distant, population about 100,000, reached by trolley. Surface of farm, rolling. Soil, gravel, loam and lime. Acres in

meadow, 30; in natural pasture, 10; in timber, 4. Acres tillable, 88. Fruit, 4 acres of fruit. Best adapted to hay, oats, rye and corn. Fences, good. House, 18 rooms, fine condition. Outbuildings all in good condition. Well watered. Occupied by tenant. Reason for selling, to close an estate. Price, \$6,000 Terms, $\frac{1}{2}$ cash. Address Geo. L. Smith, North Chatham, N. Y.

No. 241 — Farm of 83 acres, located $1\frac{1}{2}$ miles from Malden Bridge P. O.; 2 miles from railway station at Chatham Center, on line of B. & A. Ry.; 1 mile from school; 2 miles from Methodist and Catholic churches; 4 miles from milk station. Highways, good. Surface of farm, rolling. Soil, gravel, loam and lime. Acres in meadow, 35; in natural pasture, 15; in timber, 3, pine and oak. Acres tillable, 80. Fruit, 2 acres of young orchard. Best adapted to oats, rye and hay. Fences, in fair condition. House, $1\frac{1}{2}$ stories, good size, fair condition. Outbuildings, nearly new. Well watered. Kinderhook Creek $\frac{1}{2}$ mile from farm. Occupied by tenant. Reason for selling, ill health of owner. Price \$3,500. Terms, one-half cash. Address Geo. L. Smith, North Chatham, N. Y.

No. 242 — Farm of 170 acres, located $\frac{1}{2}$ mile from North Chatham P. O.; $\frac{1}{4}$ mile from railway station at North Chatham, on line of A. & S. Ry.; $\frac{1}{2}$ mile from school; $1\frac{1}{2}$ miles from Protestant church. Highways, good. Nearest city, Albany, 13 miles distant, reached by rail. Surface of farm, mostly level. Soil, gravel and limestone. Acres in meadow, 25; in timber, 25, hemlock, pine, oak and maple. Acres tillable, 120. Fruit, 125 apple trees. Fences, wall, board and wire. Large double house, in good condition. Outbuildings, two barns, corn house, sheds and wagon house. Watered, house by well and cistern; barns and fields by springs and streams. Occupied by owner. Reason for selling, owner has two other farms. For price and terms address Dudley Walker, North Chatham, N. Y.

TOWN OF CLAVERACK

Population 4,114

No. 242 $\frac{1}{2}$ — Farm of 215 acres, located 2 miles from Claverack; 3 miles from Mellenville R. D. 1; $\frac{1}{2}$ mile from railroad station at Miller's Crossing on

* Farm is in hands of agent or real estate dealer.

branch of B. & A. Ry.; 2 auto busses between Hudson and Philmont hourly; 3 miles to four different churches, high school and milk station. State road; 6 miles from Hudson, population about 12,000. Surface of farm, level. Soil, sandy loam. Acres in meadow, 100; in natural pasture, and woodland, 20, ash, pine, white oak and black oak. Acres tillable, 112. Adapted to hay and vegetables. Fences, rail and wire. Fruit, 450 apple and 380 pear trees. Large house in good condition. Outbuildings, large barn, large wagon house, tool house, hog house, ice house, small shop, wood house and hen house. Watered by well, spring and creek. Occupied by owner. Reason for selling, owner is not a farmer. A good trout stream runs through farm, also a fish pond on the farm covering nearly 2 acres, fed by 3 springs. Price \$6,000. Terms, \$3,300 cash, remainder on mortgage. Address Guy Shook, Philmont, N. Y.

*No. 243—Farm of 135 acres, located 1 mile from Martindale P. O., R. D. 2 and railway station, on line of N. Y. C. Ry.; $\frac{1}{2}$ mile from school; 1 mile from Protestant church and milk station. Nearest city, Hudson, 10 miles distant, population about 12,000, reached by rail. Surface of farm, rolling. Altitude, about 650 feet. Soil, loam. Acres in meadow, 25; in timber, 15, pine and hardwood. Acres tillable, 80. Fruit, 100 apple, 20 pear, 10 plum, 50 peach and 10 cherry trees, also 3 grape vines and 8 currant bushes. Best adapted to oats, corn, rye and fruit. Fences, wall and wire. House, $1\frac{1}{2}$ stories, 14 rooms, good condition. Outbuildings, barn, shed, 3 hen houses, wagon house, ice house, smoke house, milk house, wood house, good condition. Watered, house, by well; barns, by running water; fields, by streams. Occupied by owner. Reason for selling, ill health of owner. Price \$3,000. Address Herbert Eggleston, agent, Millerton, N. Y.

TOWN OF CLERMONT

Population 800

No. 244 — Farm of 5 acres, located 5 miles from Germantown P. O., R. D. 1; 5 miles from railway station at Germantown, on line of N. Y. C. R. R.; $\frac{1}{8}$ mile from school; 2 miles from church; 4 miles from butter factory; 5 miles from milk station. Nature of highways, good. Nearest city, Hudson, population

12,000, 11 miles distant, reached by highway. Surface, level. Soil, gravelly loam. Acres in meadow, 5. About 30 to 40 fruit trees. Fences, wire, in good condition. House in good condition. No barn, but other outbuildings. Watered by well and spring. This place is best adapted to small fruit and vegetables; also well adapted to poultry raising. It is near an electric light and power plant that is being developed at large cost. Occupied by tenant. Price, \$1,500. Terms, \$700 cash, balance on time. Owner will rent for \$125 per year, payable in advance. Address H. S. Williams, Clermont, N. Y.

No. 245—Farm of about 20 acres, located $1\frac{1}{4}$ miles from Clermont P. O.; 6 miles from railway station at Tivoli, on line of New York Central R. R.; $4\frac{1}{2}$ miles from C. N. E. R. R. station; $1\frac{1}{4}$ miles from school; 3 miles from churches; 6 miles from butter factory; $4\frac{1}{2}$ miles from milk station. Nature of highways, good. Nearest city, Hudson, population about 12,000, 13 miles distant, reached by highway. Soil, limestone. Acres in meadow, 10; in natural pasture, 3; acres tillable, 18. About 375 fruit trees. Adapted to all climatic crops; would make a good poultry, fruit or dairy farm. House in fair condition. Good-sized barn and other outbuildings, in fair condition. Watered by well. 6 miles from Hudson River and boat lines. Occupied by tenant. Reason for selling, owner bought place to improve and sell. Price, \$2,200. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address H. S. Williams, Clermont, N. Y. Owner will rent.

No. 246—Farm of 80 acres, located $1\frac{3}{4}$ miles from Elizaville P. O.; $1\frac{1}{2}$ miles from railway station at Elizaville, on line of C. N. E. R. R.; 6 miles from N. Y. C. R. R., and 6 miles from the Hudson River boat lines at Tivoli; 1 mile from school; $1\frac{3}{4}$ miles from church; 1 mile from butter factory; $1\frac{1}{2}$ miles from milk station. Highways, hilly. Nearest city, Hudson, population about 12,000, 14 miles distant, reached by highway. Surface, part level and some hilly. Soil, sandy loam. Acres in meadow, 30; in natural pasture, 10; in timber, 5; acres tillable, 70. Over 100 fruit trees. Best adapted to hay, oats, fruit, apples, pears, cherries and small fruit; would make a good poultry

* Farm is in hands of agent or real estate dealer.

or dairy farm. Fences, wire and rail, in fair condition. Good-sized house, in good condition. Large barn, in good condition. Watered by well. Location is high and healthful. Occupied by tenant. Price, \$3,500. Terms, \$1,500 cash, balance on time. Address H. S. Williams, Clermont, N. Y. Owner will rent.

TOWN OF COPAKE

Population 1,283

*No. 247—Farm of 186 acres, located 3 miles from Hillsdale P. O., R. D.; 3 miles from railway station at Hillsdale and Copake Iron Works, on line of Harlem Division of N. Y. C. R. R.; 1 mile from school; 3 miles from churches and milk station. Highways, good. Nearest city, Hudson, population 12,000, 20 miles distant, reached by rail and highway. Surface, rolling, some hill land. Soil, limestone. Acres in meadow, 50; in natural pasture, 30; in timber, 20, chestnut and oak; acres tillable, 136. Fruit, about 3 acres of apples, also pears, cherries and grapes. Best adapted to general farming or dairying. Fences, rail, wire and stone. House, large, 12 rooms, piazza on 3 sides of house, good condition. Outbuildings: main barn, 90x30, in need of repairs; small barn; corncrib and granary, in good condition. Watered by well, spring and brook. Occupied by owner. Reason for selling, ill health of owner. Price, \$6,000. Terms, \$3,000 down, balance on mortgage. Address M. L. Jenks, Millerton, N. Y.

*No. 248—Farm of 17 acres, located $\frac{1}{2}$ mile from Copake Falls P. O. and railway station, on line of Harlem Ry., $\frac{1}{4}$ mile from school, $\frac{1}{2}$ mile from Catholic and Protestant churches, $\frac{3}{4}$ mile from milk station. Nearest city Hudson, population about 12,000, 16 miles distant, reached by rail. Surface of farm rolling. Altitude about 850 feet. Soil, limestone. Acres tillable, 15. Fruit, about 75 apple trees. House, 20x30, 5 rooms and bath on first floor, 2 rooms upstairs, piazza, 7x40, good condition. Outbuildings, cow barn, 2 chicken houses, 2 wagon houses, 1 tool house and summer kitchen, good condition. Watered, house and barn by running water, fields by springs and streams. Occupied by owner. Price, \$3,500. Terms cash. Address Herbert Eggleston, agent, Millerton, N. Y.

TOWN OF GALLATIN

Population 720

No. 249—Farm of 150 acres, $2\frac{1}{2}$ miles from Jackson Corners P. O., R. D.; $2\frac{1}{2}$ miles from Mt. Ross railway station, on line of C. N. E. R. R. Good roads. Soil, slate and loam. Acres in meadow, 50; acres tillable, 140; in timber, about 12, mostly oak and chestnut. Fruit, 200 trees, plums, peaches, apples and pears. Best adapted to corn, oats, rye, hay and potatoes. Fences, in fair condition. House, 42x30, in good condition. Barn, 54x50, in good condition. Watered, house, by well; barn, by stream and spring. Nearly all the meadow is tillable; about 8 acres not so good, but has been plowed and can be again. Reason for selling, owner does not need farm. Price, \$2,500. Terms, \$800 cash, balance on bond and mortgage at 5%. Name and address of owner, Peter J. Near, Jackson Corners, N. Y.

*No. 250—Farm of 150 acres, located 2 miles from Ancram P. O. and railway station, on line of C. N. E. R. R.; 2 miles from school and church. Highways, good. Surface, part level and part rolling. Soil, loam and slate. Acres in meadow, 120; timber, 30, oak, chestnut, some large; acres tillable, 120. Fruit of all kinds except peaches, grapes and berries. Best adapted to hay, oats and rye. Fences, rail and wire, fair condition. House, $1\frac{1}{2}$ stories, 7 rooms, in good repair. Outbuildings: 2 barns; horse barn, cow stable, room for 24 cows and 4 horses, storage for 100 tons of hay. Watered by well, springs and stream. Occupied by tenant. Price, \$2,500. Terms, easy. Address Herbert Eggleston, Millerton, N. Y.

*No. 251—Farm of 285 acres, 1 mile from Jackson Corners P. O., R. D.; on line of C. N. E. R. R.; 1 mile from station, school and Methodist church. Highways, good. 5 miles from milk station. Nearest large village, Pine Plains, 5 miles distant, reached by rail and highway. Occupied by tenant. Surface of farm, rolling. Soil, sandy loam. Acres in meadow, 120; in natural pasture, 100; in timber, 35, oak, chestnut, hemlock, hickory and maple; acres tillable, 225. Fruit, 100 apple trees, 10 pear trees, 50 plum trees, 50 peach trees. Best adapted to corn, rye, oats and hay. Fences, stone wall, stakes and rail.

* Farm is in hands of agent or real estate dealer.

House, 40x50, in good condition. Main barn, 50x40, additions, 50x18 and 50x30, in fair condition. Watered, house and barn, by running water; fields, by springs and streams. Reason for selling, owner unable to work farm. Price, \$7,000. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address John O. Fulton, agent, Red Hook, N. Y.

*No. 252—Farm of 150 acres, located 2 miles from Elizaville P. O. and railway station, on line of C. N. E. Ry., 2 miles from school and Methodist church, R. D. 2 from Jackson Corners. Highways somewhat hilly but good. Nearest city, Hudson, 18 miles distant, population about 12,000, reached by rail and highway. Occupied by owner. Surface of farm rolling. Acres in meadow, 60; in natural pasture, 60; in timber, 25, oak, hickory, chestnut and pine. Acres tillable, 125. Soil, gravel. Fruit, 2,000 apple, 500 pear and 50 cherry trees. Best adapted to fruit, hay and grain. Fences, stone wall and rail. Watered, house by spring, barn by running water, fields by spring. Price, \$8,500. Terms, \$3,500 cash, balance on mortgage. Address John P. Fulton, agent, Red Hook, N. Y.

*No. 253—Farm of 246 acres, located $\frac{3}{4}$ of a mile from Elizaville P. O., 1 mile from Elizaville railway station, on line of C. N. E. Ry., $\frac{3}{4}$ mile from Methodist church. Highways, good gravel roads. Nearest large village, Red Hook, 7 miles distant, population about 2,000, reached by rail and highway. Occupied by owner. Surface of farm, 100 acres creek meadows, balance rolling. Soil, gravel and black loam. Acres in meadow, 150; in natural pasture, 46; in timber, 50; pine, oak, chestnut, locust, hickory, ash and hemlock. Acres tillable, 200. Fruit, 500 apple and pear trees. Best adapted to corn, rye, oats, potatoes and hay. Fences, stone wall, rail and wire, good condition. House, 40x30, with addition, 45x20, fine condition. Outbuildings, large main barn, wagon house, hay barns, hog houses, etc. Watered, house and barn by running water, fields by spring and stream. This farm is one mile from Twin Lake. Reason for selling, ill health of owner. Price, \$12,000. Terms, \$7,000 cash, balance on mortgage. Address John P. Fulton, agent, Red Hook, N. Y.

TOWN OF GHENT

Population 2,819

No. 254—Farm of 175 acres, located 2 miles from Mellenville P. O.; $\frac{1}{4}$ mile from railway station at Pulver Station, on line of Hudson & Chatham branch of B. & A. R. R.; $\frac{2}{3}$ mile from school; 3 miles from churches; 2 miles from Borden's milk station. Nearest large village, Philmont, population 2,000. Highways, good. Surface, mostly level, some rolling. Soil, black and gravelly loam. All of the land tillable. Fruit enough for family use. Best adapted to rye, oats, hay, corn and potatoes. Fences, woven wire, board and wall. Extra fine house, 12 large rooms, 2 large halls, colonial style. Outbuildings: large side-hill barn, cow stable, sheep stable, hog-house, cornhouse, carriage and wood-house, in fair condition. Watered by well and stream. This property is about 8 miles from the Hudson river. This is a high-class farm, not abandoned. Reason for selling, owner has other business. Owner will rent with option to buy. For price and terms, address Elbert Miller, 314 W. 112th street, New York City.

No. 255—Farm of 216 acres, located 2 miles from Ghent P. O.; 2 miles from Ghent or Chatham, on line of N. Y. C., B. & A., H. & C. and Rutland R. R.; 1 mile from school; 2 miles from churches; 3 miles from Borden's milk station. Nearest large village, Chatham, population 2,251; also 12 miles from city of Hudson, population 12,000. Highways, good. Surface, some level, some rolling and some hilly. Soil, black and gravelly loam. Acres tillable, 200; balance, mostly wooded, some good oak and pine timber. Fruit, about 350 fruit trees of all kinds. Best adapted to rye, oats and corn, hay and potatoes. Fences, mostly woven wire, some board and stone wall, in good condition. House, 19 rooms, 3 halls, separate apartments for owner and farmer, in excellent condition. Fine large shade trees. Outbuildings: main barn, side hill, 58x40; carriage house and horse stable, 72x24; cow stable, 60x22; sheep stable, 28x24; hen and tool house, 23x14; cornhouse and workshop, 24x22; garage, 20x17; hog-house, 20x15; icehouse, 15x15; smoke-house, 11x9; woodhouse, 22x14; all in fine condition. Watered by running water in barns, 3 wells and 3 streams,

* Farm is in hands of agent or real estate dealer.

and 2 cisterns. Have dam built across one small stream forming a nice ice pond. This property is 4 miles from the Hudson river and $7\frac{1}{2}$ miles from Kinderhook Lake. This is not an abandoned farm. Reason for selling, owner engaged in other business. For price and terms, address Elbert Miller, 314 W. 112th street, New York City.

No. 256—Farm of 212 acres, located $1\frac{1}{2}$ miles from Ghent P. O., R. D. 2; $1\frac{1}{2}$ miles from railway station at Ghent, on line of Harlem R. R. and Hudson branch of B. & A. R. R.; $\frac{3}{4}$ mile from school; $1\frac{1}{2}$ miles from Protestant churches; 3 miles from butter factory and milk station. Roads, good and a little hilly. Nearest village, Chatham, population 2,251, 4 miles distant, by rail and good highway. Surface, part hilly and part level. Soil, gravelly loam and slate. 65 acres of meadow; 50 acres of natural pasture; 15 acres of timber, mostly second growth, including 5 acres of pine; acres tillable, 150. About 100 bearing apple trees, and several plum, peach and pear trees. All kinds of crops seem to do fairly well. Fences, mostly wire, some stone wall. There are two complete sets of buildings, near enough for convenience. The 2 houses are $1\frac{1}{2}$ stories, in fair condition. One 2-story barn, and plenty of other barns and buildings for convenience and comfort, all in good condition, mostly newly roofed. House has water piped from spring; barns, piped from running stream; fields have several springs. The Catskill Mountains are in full view from the piazza, and any part of farm, about 10 miles distant; the Hudson river about same distance. This farm is one of the best watered in this section; water from never-failing spring is piped to the house and barn. Telephone in house, and R. D. passes door. The farm is practically divided by the Harlem R. R. One set of buildings each side. It is particularly adapted to stock, especially sheep. Occupied by owner, and has been for 32 years. Reason for selling, owner's desire to retire. Price, \$9,000. Terms, $\frac{1}{2}$ cash, balance mortgage, 5%, term of years. Address Delmer Kisselburgh, Ghent, N. Y.

TOWN OF GREENPORT

Population 1,639

*No. 257—Farm of 40 acres, located $\frac{1}{4}$ mile from Stockport P. O. and railway

station, on line of A. & H. Ry., $\frac{1}{4}$ mile from school and church, 3 miles from butter factory. State road. Nearest city, Hudson, 3 miles distant, population about 12,000, reached by rail and highway. Surface of farm level. Altitude about 300 ft. Soil, deep loam. Acres tillable, 40. Large amount of fruit. Large house, all improvements. Watered by city water. $\frac{1}{2}$ mile from Hudson river. Occupied by owner. Reason for selling, ill health of owner. Price, \$22,000. Terms, $\frac{1}{2}$ down. Address S. N. Loomis, agent, Chatham, N. Y.

TOWN OF HILLSDALE

Population 1,504

*No. 258—Farm of 225 acres, located $1\frac{1}{2}$ miles from P. O. and station at Hillsdale, on the line of the Harlem R. R.; $1\frac{1}{2}$ miles from school; $1\frac{1}{2}$ miles from churches, Methodist and Presbyterian; $1\frac{1}{2}$ miles from milk station. Has State road within $\frac{1}{2}$ mile of farm. Nearest village, Hillsdale, population 800, $1\frac{1}{2}$ miles distant, reached by highway. Surface, rolling. Altitude, between 900 and 1,000 feet. Soil, slate-stone loam. 150 acres in meadow; 50 acres in natural pasture; 25 acres in timber of chestnut and oak; 175 acres tillable. Fruit consists of 20 pear trees, 30 apple trees, cherries, plums, grapes, etc. Land best adapted to hay and grain crops. Fences, stone wall, wire and rail, in fair condition. House, 2 stories, 6 rooms, in fair condition. Barn with basement, room for 25 head of stock, wagons, hay, grain, etc. House has well water; barns, spring water; and fields have springs. Copake Lake is 4 miles distant. Farm is occupied by tenant. Reason for selling owner wishes to retire. Price, \$4,500. Terms, \$700 cash, mortgage of \$3,800 may remain 10 years at 5%. Address Herbert Eggleston, Millerton, N. Y.

*No. 259—Farm of $167\frac{1}{2}$ acres, located $3\frac{1}{2}$ miles from Hillsdale P. O. and $3\frac{1}{2}$ miles from station at Philmont, on the line of the Harlem R. R.; $\frac{1}{4}$ mile from school; $\frac{1}{2}$ mile from Methodist church; 1 mile from German Lutheran church; $\frac{1}{2}$ mile from milk station. Highways, good. Surface, rolling. Nearest town, Philmont, population 1,813, distant $3\frac{1}{2}$ miles by highway. Altitude, about 800 feet. Soil, slate and loam. 125 acres of meadow; 11 acres of natural

* Farm is in hands of agent or real estate dealer.

pasture; 30 acres of timber, chestnut and oak; acres tillable, 136½. Fruit consists of 50 apple, 12 cherry, 35 plum, 5 peach and 21 pear trees. Land is adapted to hay and grain. Fences, stone wall and wire, in good condition. Main house, 20x40, addition, 18x35 and 12x20, 2 stories, 14 rooms. Main barn, 40x60; horse barn, 26x40; hoghouse; cornhouse. House watered from spring; barns, by stream; fields, by stream and springs. Occupied by owner. Reason for selling, owner desires to purchase place in village. Price, \$4,000. Terms easy. Address Herbert Eggleston, Millerton, N. Y.

*No. 260—Farm of 111 acres, 2 miles from Craryville P. O. and station, on line of Harlem R. R.; ½ mile from school; 2 miles from Methodist and Baptist churches; 2½ miles from milk station. Highways, good. Nearest village, Philmont, population 1,813, distant 5 miles, by highway and rail. Surface, level. Soil, black loam. Altitude, about 500 feet. 100 acres of meadow; 11 acres of timber; 100 acres tillable. Fruit consists of 100 apple, pear, cherry and plum trees, and berries. Land best adapted to raising of fruit and vegetables. Fences, wire and rail, in good condition. Large house, with addition, 22x14, containing 12 rooms, all in good condition. Barn with basement containing stable room for 20 head of stock; wagonhouse and poultryhouse. House is watered by spring; barn by spring; fields by springs. Occupied by owner. Reason for selling, owner wishes to retire. Price, \$4,500. Terms, \$1,500 cash. Address Herbert Eggleston, Millerton, N. Y.

No. 261—Farm of 140 acres, 5 miles from Hillsdale P. O. and railway station on Harlem Division of N. Y. C. R. R.; ½ mile from school; 2½ miles from churches; 2½ miles from cheese factory and milk station; R. D. and telephone connections. Highways, good and level. Nearest city, Hudson, population about 12,000, distant 16 miles, reached by rail and highway. Occupied by owner. Surface of farm, rolling. Soil, slate loam. Acres in meadow, 30 to 40; timber, 35, oak and chestnut; acres tillable, 100. Fruit, apples, plums, grapes, pears, and peaches, fine variety. Adapted to hay, potatoes and all kinds of grain. Fences, rail and wall. House, 48x30, in good condition. Outbuildings, all in good condition. 1,000 feet above sea level; the

best of air and finest spring water. An ideal summer residence. Price, \$3,000. Terms, easy. Address Judson Wiley, Hillsdale, N. Y.

No. 262—Farm of 42 acres, located 2½ miles from Hillsdale P. O.; 2½ miles from railway station, on line of N. Y. C. R. R. at Hillsdale; 5 miles from cheese factory; 2½ miles from condensing plant. Highways, good. Soil, limestone. Good orchard. Best adapted to corn, oats, rye and potatoes. Good-sized house. Good-sized barn. Reason for selling, advanced age of owner. Price, \$1,800. Terms, ½ down. Address James Ward, Hillsdale, N. Y.

*No. 263—Farm of 41½ acres, located 1 mile from Hillsdale P. O.; 1 mile from railway station at Hillsdale, on line of N. Y. C. R. R.; ½ mile from school; ¾ mile from churches. Highways, good. Nearest large village, Hillsdale, population 400. Surface, level. Acres tillable, 2. Fruit, 50 apple trees, pears and plums. House of 12 rooms, in excellent condition. Watered by well and stream. This property is located 1 mile from Berkshire Hills, and 4 miles from Prospect Lake. Occupied by tenant. It is located on main State road from Hudson to Great Barrington, Mass., near a nice stream of water. Standing high and dry, its location cannot be excelled. Price, \$2,500. Terms, cash. Owner will rent. Address William A. Mallery, Hillsdale, N. Y.

*No. 264—Farm of 10 acres; located 1½ miles from Hillsdale P. O.; 1½ miles from railway station; ½ mile from school; 1 mile from churches; 1½ miles from butter and cheese factory. Nearest large village, Great Barrington, Mass., population 5,000. Highways, good. On State road leading from Great Barrington, Mass., to Hudson, N. Y. Surface, rolling. Soil, loam. Acres in meadow, all; acres tillable, all. Fruit, 60 pear trees, apples and cherries. Adapted to all general crops. Fences, wall and rail. House, 18x24, 1½-story, in good condition. Outbuildings, in good condition; barn, 20x30; shed, 24x14. Watered by well, spring and stream. This property is 3 miles from Prospect Lake. Occupied by tenant. Reason for selling, owner has other business. Price, \$2,000. Terms, ½

* Farm is in hands of agent or real estate dealer.

down, balance on mortgage. Address W. A. Mallery, Hillsdale, N. Y.

*No. 265—Farm of 178 acres; located $1\frac{1}{2}$ miles from Hillsdale P. O.; $1\frac{1}{2}$ miles from railway station, on line of N. Y. C. R. R.; $1\frac{1}{2}$ miles from school; $1\frac{1}{2}$ miles from churches; $1\frac{1}{2}$ miles from butter factory and milk station. Highways, good. Nearest large village, Great Barrington, Mass., population 5,000. Surface, rolling. Soil, loam and limestone. Acres tillable, 158; 20 acres of chestnut, pine and oak timber. Fruit, 100 apple trees, pears and plums. Best adapted to rye, corn, oats, potatoes, hay. Fences, wall, rail and some wire, in good condition. House, 40x45, in excellent condition. Outbuildings: 2 barns, one 86x40, and other 24x40; large wagonhouse and sheds; tenant house, 24x40. Watered by wells, springs and streams. Occupied by tenant. Reason for selling, owner has other business. Price, \$10,000. Terms, easy. Address W. A. Mallery, Jr., Hillsdale, N. Y.

*No. 266—Farm of 4 acres; located 1 mile from Hillsdale P. O.; 1 mile from railway station; 1 mile from churches; 1 mile from butter factory and milk station. Highways, good; on State road leading from Great Barrington, Mass., to Hudson, N. Y. Nearest large village, Great Barrington, Mass., population 5,000. Surface, level. Good limestone soil. Acres in meadow, all; acres tillable, all. Fruit, about 20 apple trees. Best adapted to hay and garden truck. Fences, good. House, 40x24, $2\frac{1}{2}$ stories, in excellent condition. Outbuildings, good. Watered by wells, spring and streams. This property is 6 miles from Copake Lake and 4 miles from Prospect Lake. Occupied by tenant. Reason for selling, owner has other business. Price, \$2,500. Terms, easy. Address W. A. Mallery, Hillsdale, N. Y.

*No. 267 — Farm of 116 acres, located $1\frac{1}{2}$ miles from Hillsdale P. O.; $1\frac{1}{2}$ miles from railway station at Hillsdale, on line of Harlem R. R.; 1 mile from school; $1\frac{1}{2}$ miles from churches of all denominations and milk station. Highways, good. Nearest village, Philmont, 10 miles distant, reached by rail and highway. Surface of farm, rolling. Altitude, 1,200 feet. Soil, gravelly loam. Acres in meadow, 65; in natural pasture, 25; in timber, 26; acres tillable, 65.

Fruit, apples, pears, peaches, plums, cherries, and small fruits. Best adapted to fruit and grain. House, $1\frac{1}{2}$ stories, 5 rooms, in good condition. Cow barn, horse stable, room for hay, grain, etc., in good condition. Watered, house, by well; barns, by springs; fields, by springs and streams. Near the Berkshire Hills. Occupied by tenant. Reason for selling, owner lives in New York. Price, \$2,500. Terms, $\frac{1}{2}$ cash. Address Herbert Eggleston, agent, Millerton, N. Y.

No. 268 — Farm of 140 acres, located 4 miles from Hillsdale P. O., R. D. 1; 4 miles from railway station at Hillsdale, on line of Harlem R. R.; $\frac{1}{16}$ mile from school; $\frac{1}{16}$ mile from Methodist church; $\frac{1}{2}$ mile from butter factory; 4 miles from milk station. State road. Nearest village, Chatham, population 2,251, 10 miles distant, reached by rail or highway. Surface of farm, rolling. Soil, lime. Acres in meadow, 60; in natural pasture, 70; in timber, 10, white pine and hemlock; acres tillable, 125. Fruit, apples. Best adapted to grass, corn, oats and rye. Fences, wire, with some stone wall. House, 2 stories, 35x22, with wing, in fine condition. Barn, 62x30; wagonhouse, 40x28; hay barn, 25x20; grain building, 20x18; hoghouse, 25x18; icehouse. Watered, house by well and cistern; barns, by well with wind mill; fields, by creek. Five miles from Prospect Lake, Mass. Pleasant place for a residence. Reason for selling, to close estate. Price, \$8,000. Address Austin Morey estate, Hillsdale, Columbia County, N. Y.

*No. 269 — Farm of 154 acres, located $2\frac{1}{2}$ miles from Craryville P. O., R. D. No. 3 and railway station, on line of Harlem Division of N. Y. C. Ry.; $1\frac{1}{2}$ miles from school and Protestant churches; $2\frac{1}{2}$ miles from butter factory and milk station. Highways good. Surface of farm rolling. Altitude about 800 feet. Soil, loam. Acres in meadow, 30; in natural pasture, 60; in timber, 60, nearly all kinds. Acres tillable, 80. Fruit, apples, plums and pears. Best adapted to corn, potatoes, oats and rye. Fences, wall and rail. House, large, 2 stories, fair condition. Outbuildings, horse and cow stables. Watered, house by running water, barns by creek, fields by creek and springs. Occupied by owner. Reason for selling, ill health of

* Farm is in hands of agent or real estate dealer.

owner. Price, \$2,500. Terms easy. Address W. A. Mallery, agent, Hillsdale, N. Y.

*No. 270 — Farm of 130 acres, located $1\frac{1}{2}$ miles from Hillsdale P. O., R. D. 1, and railway station, on line of Harlem Division of H. R. R. R.; $1\frac{1}{2}$ miles from school, butter factory, milk station and churches. Highways in good condition. Nearest large village, Great Barrington, Mass., 9 miles distant, population about 5,000, reached by rail and highway. Surface of farm level. Altitude about 800 feet. Soil, limestone. Acres in meadow, about 100; in timber, 12, chestnut and oak. Nearly all tillable. Fruit, 100 trees, peaches, cherries, plums and apples. Best adapted to corn, oats, hay and rye. Fences, rail and wire, good condition. House, nearly new, 40x52, 2 stories. Outbuildings, good barns and sheds. Watered, house by running water, barns by spring, fields by spring and stream. Occupied by owner. Reason for selling, advanced age of owner. For price and terms, address W. A. Mallery, agent, Hillsdale, N. Y.

TOWN OF KINDERHOOK
Population 2,947

No. 271 — Farm of 125 acres, located $1\frac{1}{2}$ miles from Kinderhook P. O.; $1\frac{1}{2}$ miles from railway station at Kinderhook, on line of A. & S. R. R.; $1\frac{1}{2}$ miles from school, Reformed church and 3 churches of other denominations; 3 miles from butter factory; 4 miles from milk station. Highways, good. Nearest city, Hudson, population 12,000, 14 miles distant, reached by rail or highway. Surface, mostly level, some rolling. Soil, sandy loam. Acres in meadow, 20; in natural pasture, 10; in timber, 5, hard wood, oak, ash, locust for posts; acres tillable, 100. Fruit, 400 apple trees in full bearing, cherries, pears, grapes, young orchard of 400 trees. Best adapted to potatoes, corn, oats, rye. Fences, mostly wire, in good condition. House, 30x40, with wing, 15x15, water, bath and telephone, in good condition; tenant house, 24x30; 2 barns, 30x40; stable and wagonhouse, 40x20; shed and cow stable, 30x50; cornhouse and wagonhouse, 20x24. Watered, house, by well and cistern; barns, by wells; fields, by springs and running stream. Three miles from Kinderhook Lake. Ten miles from Hudson River; 14 miles from Catskill Mountains. Occupied by owner.

Reason for selling, owner wishes to locate in the city. Price and terms on application. Address A. M. Snyder, Valatie, N. Y., R. D.

No. 272 — Farm of 200 acres, situated within the incorporated village of Kinderhook, population about 1,000. Fertile, productive soil. Albany Southern Railway Station about $\frac{3}{4}$ mile from farm, hourly service. Churches, high school, grange and stores within easy walking distance. State road. Village has 5 miles of concrete sidewalks and streets are lighted by electricity. Farm contains about $\frac{1}{2}$ bottom land or creek flats which produce large crops of corn, hay, grain and barley. Wood enough for home use. Good pasture. Kinderhook Creek flows through the farm. Abundance of springs, giving unlimited water supply. Trout pond and springs from which water is supplied by hydraulic ram to house and barns. Three hundred and fifty young apple trees just in bearing; 750 young trees planted recently, 500 pear trees in bearing, other fruit for home use. House, 13 rooms, 200 years old, bath and heat, excellent repair. Nine-room cottage for farm help. Ample barns, including 3 silos, stable room for 200 head of cattle, storage room for hay, grain and farm tools. For price and further particulars, address Wm. B. Van Alstyne, Kinderhook, N. Y.

No. 273 — Farm of 190 acres, located $2\frac{1}{2}$ miles from Valatie P. O., R. D. 1, and railway station, on line of A. & S. Ry.; $2\frac{1}{2}$ miles from High School, Catholic and Protestant churches. Highways in good condition. Nearest city, Albany, 16 miles distant, population about 100,000, reached by rail and highway. Occupied by owner. Surface of farm nearly level. Soil, clay loam and sand. Acres in meadow, 63; in timber, 12, white and yellow pine, white and black oak and maple. All tillable except timber land. Fruit, 500 apple trees, also a few peaches, pears, cherries and grapes. Best adapted to grain, corn and hay. Fences, American wire, Knox wire, good condition. House, 2 stories, 18 rooms, piazza, good condition. Outbuildings, barn 50x60, hip roof, good. Watered by well, cistern and brook. This farm is $2\frac{1}{2}$ miles from Kinderhook Lake. Price, \$12,000. Terms, $\frac{1}{2}$ down, remainder on mortgage. Reason for selling, ill health of owner. Address Katharine M. Pruyn, Valatie, N. Y. R. D. 1.

* Farm is in hands of agent or real estate dealer.

TOWN OF LIVINGSTON

Population 1,620

No. 274 — Farm of 275 acres, 8 miles from Hudson; $\frac{1}{4}$ mile from school; $2\frac{1}{2}$ miles from churches; $3\frac{1}{2}$ miles from creamery. Highways, good. Nearest city, Hudson, population 12,000, 8 miles. Surface features, level. Nature and quality of soil, loam. Acres in meadow, 200; natural pasture, 75; all tillable. Fruit, about 100 apple trees. Best adapted to hay, grain, potatoes and dairying. Thirty cows on farm at present. Fences, wire and good. House, 2 stories, basement, 10 rooms. Outbuildings: 3 barns, 62x52, 45x38, 46x32, good condition. Watered, house by well; barns and fields, by well and springs. Reason for selling, advanced age of owner. Price, about \$11,000. Address W. S. Wattles, Box 124, Hudson, N. Y.

TOWN OF NEW LEBANON

Population 1,378

*No. 275 — Farm of 144 acres, located $1\frac{1}{2}$ miles from Brainard P. O., $1\frac{1}{2}$ miles from railway station at Brainard, on line of Rutland Division of N. Y. C. R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{2}$ miles from churches. Highways, good, near State road. Nearest city, Pittsfield, population 25,000, 12 miles distant, reached by rail or highway. Surface, nearly level. Altitude, 1,000 feet. Soil, loam. Acres in meadow, 100; in natural pasture, 20; in timber, 24, oak, chestnut, hickory; acres tillable, 100. Fruit, 75 apple trees, peaches, plums, cherries and pears, also small fruits. Adapted to all crops grown in this climate. Fences, wire and rail. House, 2 stories, 14 rooms, high ceiling, in good condition. Barns, 26x65, 36x36; shed, 50x12, loft over shed; all in good condition. Watered, house, by running spring; barns, by spring. Four miles from Lake Tassawassa. Occupied by owner. Reason for selling, owner wishes to engage in other business. Price, \$4,000. Terms, \$2,000 cash, balance on mortgage. Address A. O. Mattison, agent, South Berlin, N. Y.

No. 276 — Farm of 103 acres, located $\frac{1}{2}$ mile from New Lebanon P. O.; $\frac{1}{2}$ mile from railway station at New Lebanon, on line of Rutland R. R.; $\frac{1}{2}$ mile from school; $\frac{3}{4}$ mile from Congregational church; $2\frac{1}{2}$ miles from butter factory. State road. Nearest city,

Pittsfield, population 25,000, 11 miles distant, reached by rail or highway. Surface of farm, level. Altitude, 400 feet. Soil, gravelly loam. Acres in meadow, 80; in natural pasture, 20; in timber, 3, hard wood; acres tillable, 90. Fruit, 300 apple trees, 75 cherry trees, 22 plum trees and 12 pear trees. Adapted to all crops grown in this climate. Fences, wire, in good condition. House, 35x50, 13 rooms, water in house, steam heat, with shed. Barns, 80x25, 40x50; horse stable, 30x40; icehouse; woodshed; henhouses; pighouse. Watered, house by well; barns, by water piped to barns; fields, by brook and spring. Wyomonoock Creek passes through farm. Occupied by owner. Sixty acres of mountain pasture and wood will be included. Price, \$10,000. Terms, part cash. Address Chas. Spencer, New Lebanon, N. Y.

No. 277 — Farm of 60 acres, located one mile from village of West Lebanon, post-office, hotel, church and school; $\frac{1}{2}$ mile from State road running from Albany; 12 miles from Chatham, on line of Rutland R. R.; $\frac{1}{2}$ mile from railway station and on R. D. and telephone line. Thirty acres in meadow; in pasture 15; in timber, 15, pine, chestnut and hemlock. Farm keeps 6 cows and team. Fruit, 50 bearing apple trees, also pears, plums and grapes. House, $2\frac{1}{2}$ stories, 15 rooms. Outbuildings, woodhouse, wagonhouse, cornhouse, hog and chicken house with large barn, 20x40, and shed attached, all in good condition. Watered by well. Price, \$2,200. Terms, $\frac{1}{2}$ down, balance on bond and mortgage. Address H. J. Gibson, West Lebanon, N. Y.

TOWN OF TAGHKANIC

Population 771

*No. 278 — Farm of 175 acres, located $1\frac{1}{2}$ miles from Craryville P. O., and station on the line of the Harlem R. R.; 1 mile from school and Baptist church and nearest milk station. Highways, good. State road passes farm. Nearest city, Hudson, population 12,000, distant 12 miles, reached by both rail and highway. Surface, rolling. Soil, loam. One hundred and thirty acres in meadow; 25 acres in natural pasture; 20 acres in timber, chestnut and oak; 130 acres tillable. The apple crop averages about 60 barrels per year, with plenty

* Farm is in hands of agent or real estate dealer.

of other fruit for house use. Land is adapted to corn, oats, rye and all farm produce. Fences are of wire and rail. One and one-half story house, in good condition. Horse barn and wagonhouse, 24x36; hay and cow barn, basement stable, 36x54; all barns in good condition. Watered, house, by well; barn, by tank in yard; fields, by springs and brook. Copake Lake is 2½ miles distant. Occupied by owner's people. Reason for selling, owner is not a farmer, and his people are getting old. Price given on application. Terms, easy. Address Miles L. Jenks, Millerton, N. Y.

*No. 279 — Farm of 140 acres, located 2 miles from Churchtown P. O., and 5 miles from station at Claverack, on line of B. & A. R. R.; 1 mile from school; 2 miles from Lutheran and Methodist churches; 5 miles from milk station and condensing plant. Highways, good. Nearest city, Hudson, population, 12,000, distant 8 miles, reached by rail or highway. Surface, rolling. Soil, limestone. Altitude, about 600 feet. 125 acres in meadow; 15 acres of timber; 125 acres tillable. Fruit consists of 100 apple, pear, cherry and plum

trees. Land is adapted to corn, rye, oats, buckwheat, etc. Fences are rail and stone wall, in good condition. House, 30x40, with addition, 12x14, 2 stories, containing 8 rooms. Main barn, 40x60, sheds, 15x20, wagonhouse, 20x30. House has well water; barns, watered by stream; fields, by springs and stream. Occupied by owner. Reasons for selling, old age of owner. Price, \$2,500. Terms, \$1,000 down and balance on mortgage. Address Herbert Eggleston, Millerton, N. Y.

MISCELLANEOUS

*No. 280 — At Harlemville, N. Y., farm of 140 acres; 100 acres tillable land; 25 acres pine, oak and chestnut wood; 15 acres of pasture land. Farm watered by brooks and springs. One and one-half story house, 9 rooms, painted white, good shade. One hundred apple trees, a few pears, cherries and plums. Barn, 30x40; cow and sheep barn, 24x50; hay barn, 24x36; poultryhouse, 10x20; cornhouse, 12x18; pigpen, 16x24; workshop, 20x24; buildings, all in good condition. Price, \$3,000. Address H. L. Reed, agent, Amsterdam, N. Y.

CORTLAND COUNTY

Area, 485 square miles. Population, 29,249. Annual precipitation, 48.41 inches. Annual mean temperature, 47.7°. Number of farms, 2,610. Average price of land, including buildings is \$31.73 per acre. County seat, Cortland.

This county lies in the central part of the state.

Its surface is hilly, rolling and in places broken, consisting mostly of arable ridges with rich valleys between. The highlands are divided into general ridges extending north and south through the county. The northern part of the county spreads out into a high plateau broken by hills. The drainage is nearly all through the Tioughnioga River, which flows southward centrally through the county. The county is well watered, naturally drained. The soil upon the hills is principally a sandy and gravelly loam; that in the valleys the same general character with a large mixture of disintegrated slate, shale and limestone. This is a distinctively agricultural county, although carriage, wirecloth and wagon manufacturing is quite extensive. Like most of the counties of New York State the ample railroad and transportation facilities bring it within easy reach of great markets. There is considerable timber scattered throughout the county, but not in large tracts. There are many maple groves from which sugar is made, the amount being given is 25,381 gallons of syrup and 118,550 pounds of sugar. There are 2,444 farms reporting domestic animals as follows: dairy cows, 27,427; horses, 7,033; swine, 5,233; sheep, 3,616; poultry, 153,550; production of milk was 15,743,198 gallons, with total receipts of sale of dairy products of \$1,578,776. The leading crops are corn, 74,105 bushels; oats, 396,974 bushels; barley, 24,348 bushels; buckwheat, 110,793 bushels; potatoes, 750,187 bushels; hay and forage, 130,414 tons. Churches and schools abound throughout the county. A state normal school is located at Cortland. This school with the 145 district schools, graded and high schools in villages give the amplest educational facilities. Twenty-five agricultural organizations are devoted to the interest of the farmer and sixty well-located dairy stations and factories are found.

* Farm is in hands of agent or real estate dealer.

Apples and other orchard fruits are successfully raised throughout the county. There is an increase of 19.6 per cent. over the value of farm property in the last decade. This increase is largely represented by live stock, machinery and implements. The price of land has declined eighty-three cents per acre in ten years, but the farm buildings are worth, \$1,360,000 more than in 1900. The next few years will undoubtedly change these statistics, because of the greater demand for New York farm lands which is increasing every year.

TOWN OF CORTLANDVILLE

Population 3,155

*No. 281 — Farm of 147 acres, located 2 miles from McGraw P. O., R. D. 1; $4\frac{1}{2}$ miles from Cortland P. O.; 2 miles from station of McGraw, on line of D., L. & W. R. R.; 20 rods from school; 2 miles from Baptist, Methodist and Presbyterian churches; 2 miles from milk station; $4\frac{1}{2}$ miles from condensing plant. Highways, part State roads, level; balance, easy grades. Nearest city, Cortland, population 12,000, distant about $4\frac{1}{2}$ miles, reached by highway, or half-way by trolley or railroad. Surface, level. Altitude, 1,200 feet. Soil, fertile loam. Fifty acres in meadow; 20 acres in natural pasture; 12 acres in timber, about 250 maples, balance beech; all land tillable, except wooded part. Fruit trees give apples enough for home use. Land is adapted to raising of potatoes, cabbage and grain. Fences, in fair condition, mostly wire. Ten-room house, in fair condition. Two barns, 50x50 and 20x72, need repairs and painting; house has running water and flush closets. Barns have running water. The farm is located 2 miles from the east branch of the Tioughnioga River. Reason for selling, owner living elsewhere and cannot attend to property. Milk is taken from farm by buyers' route. Price, \$2,900. Terms, \$1,500 down, balance easy payments. Address Crandall's Real Estate Agency, Homer, N. Y.

TOWN OF CUYLER

Population 881

No. 282 — Farm of 182 acres, located $1\frac{1}{2}$ miles from De Ruyter P. O.; $1\frac{1}{2}$ miles from railway station at De Ruyter, on line of L. V. R. R.; $1\frac{1}{2}$ miles from school, Methodist, Baptist and Congregational churches and milk station. Highways, hilly. Nearest city, Cortland, population 12,000, 20 miles distant, reached by rail. Surface of farm, rolling. Altitude, 1,100 feet.

Soil, gravelly loam. Acres in meadow, 75; in natural pasture, 75; in timber, 25, beech, maple, part second growth; acres tillable, 125. Fruit, 25 apple trees. Best adapted to potatoes, cabbage, oats and buckwheat. Fences, wire, in fair condition. House, medium size, in fair condition. Basement barn, 30x40, in poor condition; cow stable, 26x40, in poor condition; horse stable, 24x30, in fair condition. Watered, house, by running water; barns, by spring and brook near farm; fields, by springs and brooks. Four miles from Lake Tioughnioga. An excellent upland dairy farm; the farm lies well for cultivation. Occupied by tenant. Reason for selling, to settle an estate. Price, \$2,400. Terms, cash. Address Mrs. W. D. Blanchard, 1314 Third Street, Rensselaer, N. Y. Owner will rent.

TOWN OF HOMER

Population 3,891

*No. 283 — Farm of 150 acres, located $3\frac{1}{2}$ miles from Homer P. O., R. D. 7, and railway station, on line of D., L. & W. Ry.; $\frac{3}{4}$ mile from school; $3\frac{1}{2}$ miles from Catholic and Protestant churches and milk station; $6\frac{1}{2}$ miles from milk condensing plant. Highways, somewhat hilly but good. Nearest large village, Homer, $3\frac{1}{2}$ miles distant; nearest city, Cortland, $6\frac{1}{2}$ miles distant, reached by highway. Surface of farm, nearly level. Altitude, about 1,100 feet. Soil, gravel loam. Acres in meadow, 85; in natural pasture, 55; in timber, 10, second growth beech and maple; acres tillable, 135. Fruit, fine apple orchard, also plums and cherries. Best adapted to hay, grain, potatoes, cabbage and corn. Fences, mostly wire, good condition. House, 10 rooms, good. Outbuildings: barn, 26x124; silo, 22 stanchions; 3 box stalls; also room for 4 horses. Watered by well, spring and brook. Occupied by owner. Reason for selling, owner desires to retire from business. Price, \$5,000. Terms, \$2,250 cash, balance on mortgage at 5 per cent. Address W. G. Crandall, agent, Homer, N. Y.

* Farm is in hands of agent or real estate dealer.



FIG. 7.— HOUSE ON FARM 763, TOWN OF SARATOGA, SARATOGA COUNTY.



FIG. 8.— HOUSE ON FARM 283, TOWN OF HOMER, CORTLAND COUNTY.

TOWN OF LAPEER

Population 475

No. 284—Farm of 136 acres, $\frac{1}{3}$ mile from Hunt's Corners P. O.; $3\frac{1}{2}$ miles from Marathon railway station, on D., L. & W. R. R. Soil, loamy and good. Barn, 36x80, new, and in good condition, worth \$2,000 to build to-day. Fences, wire and rail, in good condition. Watered by spring. Only a few rods from creamery, schoolhouse, post-office and church. This is a tenant farm whose owners live in town. Price, \$35 per acre. Address Swift & Brink, Marathon, N. Y.

No. 285—Farm of 110 acres, located 4 miles from Marathon P. O., R. D. 4, and 4 miles from railway station at Marathon, on line of D., L. & W. R. R.; $\frac{1}{2}$ mile from school; $\frac{1}{4}$ mile from butter factory and cheese factory; 4 miles from milk station. Highways, good. Surface, rolling. Altitude, 1,400 feet. Soil, loam. Acres in meadow, 55; in natural pasture, 48; in timber, 7, beech, birch and maple; acres tillable, 60. Fruit, 25 apple trees. Best adapted to corn, oats, potatoes and buckwheat. Fences, wire and rail, good condition. House, upright, 20x30, wing, 16x24. Outbuildings: main barn, 52x28; horse barn, 24x36, good condition; henhouse, 16x20; hoghouse, 16x20. House and barn watered by running water. Occupied by owner. Reason for selling, poor health of owner. Price, \$3,000. Terms, one-half down, balance on time. Address Chas. Japhet, Marathon, N. Y., R. D. 4.

TOWN OF SOLON

Population 518

No. 286—Farm of 148 acres, located $1\frac{1}{2}$ miles from Solon P. O.; $1\frac{1}{2}$ miles from railway station at Solon, on line of D., L. & W. R. R.; $\frac{3}{4}$ mile from school; $\frac{1}{2}$ mile from Baptist church; $1\frac{1}{2}$ miles from Catholic church; $1\frac{1}{2}$ miles from butter factory; 3 miles from cheese factory; $1\frac{1}{2}$ miles from milk station. Highways, hilly, but good. Nearest village, McGrawsville, population 1,000, 4 miles distant, reached by rail and highway. Surface of farm, hilly and rolling. Altitude, 1,400 feet. Soil, loam. Acres in meadow, 40; in natural pasture, 60; in timber, 48, beech, maple, ash and basswood; acres

tillable, 80. Fruit, 100 apple trees, 20 pear trees and 10 plum trees. Best adapted to grass, potatoes, oats and buckwheat. Fences, mostly barbed wire, in fair condition. House 20x28, 16x24 in fair condition. Barn, 40x60; good hogpen, 18x24; in good condition. Watered, house and barns, by spring water; fields, by living spring and brook. Occupied by tenant. Reason for selling, the farm is larger than the owner wishes and he has other business. Price, \$2,500. Terms, 10 per cent. cash and 5 per cent. annually. Owner will rent for cash or with option to buy. Address M. C. Bean, McGrawsville, Cortland County, N. Y.

*No. 287—Farm of 300 acres, located $\frac{3}{4}$ mile from Solon P. O., R. D.; $\frac{3}{4}$ mile from railway station at Solon, on line of D., L. & W. R. R.; $\frac{3}{4}$ mile from school, churches and milk station; 8 miles from condensing plant. Highways, good, State road half way to Cortland. Nearest city, Cortland, population 12,000, distant 8 miles, reached by rail or highway. Surface, $\frac{1}{2}$ slopes, balance table and river flats. Altitude, 1,100 feet. Soil, splendid producing loam. Acres in meadow, 75; in pasture, 125; in timber, 100, mostly maple and beech; acres tillable, 100. Fruit, good 15-year-old apple orchard of 100 trees, plum orchard of 30 trees. Best adapted to potatoes, cabbage and grain. Fences, wire, in good condition. House, large old-fashioned house, in good condition. Good basement barns, 30x70 and 30x40, patent stanchions for 56 head, running water in front of stock; 50-ton granary opens into stable. Watered, house, by water piped to sinks, never fails; barns, by 3 cement troughs; fields, by never-failing springs. Occupied by half owner. This place cuts about 100 tons of hay. Maple sugar grove and utensils and sugar house for 1,100 trees, should pay owner from \$300 to \$500 in syrup and sugar per annum. Reason for selling, to settle an estate. Price, \$6,750. Terms, part cash. Address Crandall's Real Estate Agency, Homer, N. Y.

TOWN OF WILLETT

Population 643

No. 288—Farm of 51 acres, located $2\frac{1}{2}$ miles from Willett P. O., R. D. 2; $3\frac{1}{2}$ miles from railway station at Gee

* Farm is in hands of agent or real estate dealer.

Brook, on line of D., L. & W. R. R.; 2 miles from school; $2\frac{1}{2}$ miles from Methodist and Baptist churches; 7 miles from Catholic and Presbyterian churches; 2 miles from butter factory and cheese factory; 6 miles from milk station. Twenty-five miles from condensing plant. Highways, hilly, but good. Nearest village, Marathon, population 1,100, 7 miles distant, reached by highway. Surface of farm, part rolling, part level. Altitude, 1,250 feet. Soil, loam. Acres in meadow, 25; in natural pasture, 25; in timber, 5, sugar maple, ash and cherry; acres tillable, 50. Fruit, 25 apple trees. Best adapted to grass, oats and potatoes. Fences, stone and rail, in good condition. House, 2 stories, 8 rooms. Barns, one 30x60, one 20x40; henhouses, one 12x30, one 12x16; all in good condition. Watered, house and barns, by good well; fields, by springs and brooks. Two miles from Otselic River. Occupied by tenant. Reason for selling, owner has another farm. Price, \$1,700. Terms, \$500 cash, balance on easy terms. Owner will rent. Address John Flohavan, Lisle, N. Y.

No. 289 — Farm of 100 acres, located 5 miles from Marathon P. O., R. D. 1; 5 miles from railway station at Marathon

or Gee Brook, on line of D., L. & W. R. R.; 1 mile from school; $2\frac{1}{2}$ miles from Methodist Episcopal and Baptist churches; 5 miles from Catholic and Presbyterian churches; $2\frac{1}{2}$ miles from butter factory; 1 mile from cheese factory; 5 miles from milk station. Highways, hilly but good. Nearest village, Marathon, population 1,100, 5 miles distant, reached by highway. Surface of farm, $\frac{1}{2}$ hilly, $\frac{1}{2}$ level. Altitude, 1,120 feet. Soil, part gravel, part loam. Acres in meadow, 45; in natural pasture, 40; in timber, 15, sugar maple, ash, elm, basswood, hemlock; acres tillable, 75. Fruit, 20 apple trees and a few pear trees. Best adapted to grass, oats, corn, potatoes and buckwheat. Fences, wire and rail, in fair condition. House, 2 stories, 8 rooms on ground floor and 6 rooms above, in good condition. Farm is on Bell telephone line. Barns: basement barn, 34x60; straw barn, 16x20; shed, 14x20; pigpen, 16x18; all in good condition. Watered, house, by 2 wells; barns, by brook; fields, by springs and brooks. One mile from Otselic River. Occupied by tenant. Reason for selling, death of owner. Price, \$3,000. Terms, \$1,500 cash. Address Mrs. Mary Foley, 110 Nichols Street, Utica, N. Y., c/o J. W. Richardson. Owner will rent.

DELAWARE COUNTY

Area, 1,580 square miles. Population, 45,578. Annual precipitation, 42.7 inches. Annual mean temperature, 45.7°. Number of farms, 5,044. Average price of farm land, including buildings is \$26.65. County seat, Delhi.

Delaware stands the sixth largest county of the state and is located centrally, distant about seventy miles from Albany.

Its surface is a hilly and mountainous upland, divided into three general ridges by the valleys of the two branches of the Delaware River. In the southern part these ridges form a mountainous region, with high rocky peaks and wild narrow ravines. In the northern part the highlands are less wild and precipitous and the whole region assumes the character of a hilly upland. The soil is generally of a dark reddish color composed of disintegrated rock and shale. In the valleys are many strips of very fertile alluvium. There is considerable fine woodland on the higher portions of the county. The wells, springs, streams, rivers, ponds and lakes are very numerous and remarkable for their purity and clearness and are also noted for the enormous water power they afford.

Dairying is the principal pursuit and the county has become famous for its quality of butter. There are excellent facilities for transportation of all products to the markets of the state, the county being but a short distance from New York City. The valuation of farm property is placed at \$27,714,855, a 25 per cent. increase over that of 1900. Domestic animals are classified, dairy cows, 78,073; horses, 12,022; swine, 10,526, sheep, 9,302; poultry, 239,755; total product of milk, 41,144,471 gallons and total receipts from dairy products, \$4,724,951, these figures being excelled only by St. Lawrence County.

There are good lands in this county which can be purchased for an average price of \$23.88 per acre with fair to good buildings. The principal crops are as follows: Corn, 45,785 bushels; oats, 337,938 bushels; buckwheat, 132,284 bushels; potatoes, 479,060 bushels; hay and forage, 247,773 tons. Apples are grown in abundance and

are of the finest quality. Churches of different denominations are scattered throughout and 346 district schools are conveniently located. Twenty-four agricultural associations are devoted to the best interest of the farmer. There are 68 dairy stations and factories in the county averaging over three to each town. Forty-two miles of state road and 2,220 miles of improved highways furnish excellent local transportation facilities.

TOWN OF ANDES

Population 2,007

No. 290 — Farm of 100 acres, located $2\frac{1}{2}$ miles from Andes P. O.; $\frac{1}{4}$ mile from railway station at Kaufman's, on line of D. & N. R. R.; 1 mile from school; $2\frac{1}{2}$ miles from churches and butter factory; $\frac{1}{4}$ mile from milk station. Highways, good. Nearest village, Andes. Surface of farm, rolling. Soil, good. Acres in meadow, 20; in natural pasture, 40; in timber, 40, hardwood and basswood; acres tillable, 50. Fruit, apples. Best adapted to grass, oats, corn, buckwheat and potatoes. Fences, wire and wall. House, fair size, good condition. Outbuildings: barn, 36x46, with basement, good condition. Watered by springs. Good trout stream near farm. Milk wagon goes by door every day. Price, \$2,500. Terms, \$500 down, balance on easy terms. This farm is occupied by owner. Address Wm. H. Clement, Andes, N. Y.

*No. 291 — Farm of 300 acres, located $\frac{1}{2}$ mile from Union Grove P. O., $\frac{3}{4}$ mile from railway station at Union Grove, on line of D. & H. Ry.; $\frac{1}{2}$ mile from school, churches, butter factory and milk station. Highways, good dirt road. Nearest large village, Margaretville, 12 miles distant, population about 1,200, reached by rail. Surface of farm rolling. Soil, red slate. Acres in natural pasture, 225; acres in timber, 75, hardwood and hemlock. Acres tillable, 200. Fruit, apples, plums, cherries and berries. Best adapted to hay, corn, oats and potatoes. Fences, stone wall, fair condition. House, 24x32, all modern improvements, wing 14x16, milk room 24x30, fine condition. Outbuildings, barn 34x60, silo, wagonhouse 24x40, with basement, shop and icehouse 12x50, henery, 12x54. Watered by springs. Occupied by owner. Reason for selling, unable to get help to work farm. Price, \$6,000. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address Hewitt & Black, agents, Delhi, N. Y.

No. 292 — Farm of 131 acres, located 4 miles from Shavertown P. O. and rail-

way station, in line of D. & E. Ry.; 1 mile from school; $3\frac{1}{2}$ miles from church; 4 miles from milk station. Highways somewhat hilly. Surface of farm hilly. Soil, red slate. Acres in meadow, 25; in natural pasture, 25; in timber, 50, beech, birch and maple. Acres tillable, 75. Fruit, fine apple orchard. Fence, wall and wire, fair condition. House in fair condition. Outbuildings, overshot barn, hogpen and milkhouse. Watered by spring. Unoccupied. Reason for selling, ill health of owner's wife. A fine sap bush near house. Price, \$1,000. Terms, $\frac{1}{2}$ cash, balance to suit purchaser. Address Arthur Austin, Shavertown, N. Y. Owner will rent.

TOWN OF BOVINA

Population 912

*No. 293 — Farm of 290 acres, located 3 miles from South Kortright P. O. and railway station, on line of U. & D. Ry.; 1 mile from school; 3 miles from Protestant churches; $1\frac{1}{2}$ miles from butter factory and milk condensing plant. Highways in good condition. Nearest large village, Delhi, 12 miles distant, reached by rail. Surface of farm rolling. Altitude about 1,800 feet. Soil, red slate and loam. Acres in meadow, 60; in timber, 60; balance in natural pasture. Acres tillable, 200. Fruit, 30 old trees, 60 young trees. Best adapted to hay, grain and corn. Fences, wall, good condition. House, good size, fine condition. Outbuildings, barn 90x56, stables for 65 cows and four horses. Watered by springs. Occupied by owner. Reason for selling, owner is unable to get competent help to properly operate farm. Price, \$14,500. Terms, $\frac{1}{2}$ cash, balance on mortgage at 5%. This price includes 53 cows, four good horses, all dairying and farm utensils of every kind. Address Hewitt & Black, agents, Delhi, N. Y.

*No. 294 — Farm of 200 acres, located 3 miles from Bovina Center P. O.; 3 miles from railway station at South

* Farm is in hands of agent or real estate dealer.

Kortright, on line of U. & D. Ry.; 1 mile from school; 3 miles from Protestant churches, butter factory and milk station. Highways, good dirt road. Nearest large village, Delhi, 15 miles distant, reached by highway. Surface of farm rolling. Soil, red slate. Acres in meadow, 75; in natural pasture, 100; in timber, 25, hardwood. Acres tillable, 150. Fruit, 50 young trees. Best adapted to hay, corn, oats, potatoes, etc. Fences, stone wall, good. House 2 stories, 13 rooms, fine condition. Outbuildings, main barn, 30x60, with wing, 24x46; stables for 45 head of cattle, 8 horses, all in good repair; saphouse; fine henhouse, 12x36. Watered by springs. Spring brook runs through farm. Occupied by owner. Reason for selling, owner has another farm. Price, \$4,000. Terms, $\frac{1}{2}$ cash. Address Hewitt & Black, agents, Delhi, N. Y.

No. 295 — Farm of 320 acres, located 3 miles from Bovina P. O.; 7 miles from railway station at South Kortright, on line of U. & D. Ry.; $1\frac{1}{2}$ miles from school; 6 miles from churches; 2 miles from butter factory. Highways somewhat hilly but good. Nearest large village, Roxbury, 8 miles distant, reached by highway. Surface of farm hilly and rolling. Altitude about 2,600 feet. Soil, red clay, good rich soil. Acres in meadow, 100; in natural pasture, 150; in timber, 70, beech, birch and maple. Acres tillable, 225. Fruit, 65 apple, 15 pear, 10 cherry and 6 plum trees. Best adapted to grass, oats, corn and dairying. Fences, stone wall and wire, good. House, 15 rooms, 2 stories and attic, new, all modern improvements. Outbuildings, barn, 106x96, 3 stories, good, nearly new; milkhouse; wagonhouse and henhouse, 30x14, good condition. Watered, house and barn by running water, fields by spring and brook. Occupied by owner. Reason for selling, owner a widow. Price, \$8,000. Terms, \$3,000 down, balance on time. Address Mrs. W. L. Ruff, Bovina, N. Y.

TOWN OF DAVENPORT

Population 1,427

No. 296 — Farm of 170 acres, located $1\frac{1}{2}$ miles from West Kortright P. O.; $2\frac{1}{2}$ miles from railway station at East Meredith, on line of U. & D. R. R.; $\frac{1}{2}$ mile from school; 3 miles from Presbyterian and Methodist Episcopal churches; $1\frac{1}{2}$ mile from milk station. Good coun-

try roads. Nearest city, Oneonta, population 10,000, 11 miles distant, reached by highway and railroad. Surface of farm rolling. Altitude, 1,600 feet. Soil, hardpan and quite gravelly. Acres in meadow, 70; in natural pasture, 75; in timber, 25, hardwood; acres tillable 125. Fruit, 31 apple trees, choice varieties. Best adapted to grass, corn and all small grains. Fences, mostly stone and in fair condition. House, 30x30, with an addition, $10\frac{1}{2} \times 17\frac{1}{2}$, with kitchen on back. House was built in 1900 and is in first-class condition. Main part and side wing 2 stories high and finished mostly in oak and cherry. Barn, 40x90, with basement. Watered, house and barn, by running water; fields, by springs and brook. Two miles from Mud Lake. Occupied by owner. Reason for selling, advanced age of owner and difficulty of securing farm help. Price, \$6,500. Terms, \$3,000 cash, balance on mortgage. Address, James Fisher, West Kortright, N. Y.

TOWN OF DELHI

Population 2,815

No. 297 — Farm of 220 acres, $2\frac{1}{2}$ miles from Delhi P. O. and railway station. Good soil. Acres of meadow, 60; pasture, 110; timber, 50. House of 11 rooms, in good condition, hot and cold water. Silo; barns, 100x46; wagonhouse, 40x60; granary; icehouse; henhouse; shop and smokehouse. Watered by cold springs, with a fine trout brook running through premises. Fences, stone wall and wire, in good condition. The farm will keep 45 or 50 cows and has a good milk market near at hand. Price, \$7,000. Terms, \$3,000 on a 5% mortgage. Name and address of owner, Olive A. Benedict, Delhi, N. Y.

No. 298 — Farm of 80 acres, located $2\frac{1}{2}$ miles from Delhi P. O., R. D. 3; $2\frac{1}{2}$ miles from railway station at Delhi, on line of O. & W. R. R.; 1 mile from school; $2\frac{1}{2}$ miles from churches, butter factory and condensing plant. Highways, good. Nearest village, Delhi, population 2,000, $2\frac{1}{2}$ miles distant, reached by highway. Surface of farm, rolling. Altitude, 1,600 feet. Soil red slate loam. Acres in meadow, 18 to 20; in natural pasture, 40; in timber, 20, cherry, basswood and other varieties; acres tillable, 25. Fruit, 20 apple trees, 2 pear trees, 2 plum trees and 2 cherry trees. Best adapted to hay, corn and

grain. Fences, stone wall and barbed wire. House, 6 rooms, in fair condition. Barn, repaired last year, concrete floor in basement, 18 cow stalls, 3 horse stalls, hoghouse, henhouse, shed. Watered, house and barn, by running water from spring; fields, by well. Farm borders on Little Delaware River. Farm will keep 15 cows and team. Can be made to keep more cows. First-class dairy farm. Occupied by owner. Reason for selling, to settle an estate. Price, \$2,500. Terms, \$500 cash, balance at 5%, or will sell on contract with a small deposit at first payment. Will sell stock and tools if desired. Address H. D. Archer, Delhi, N. Y.

*No. 299 — Farm of 175 acres, located 4 miles from Delancy P. O., R. D. 2 and railway station, on line of O. & W. R. R.; $\frac{1}{4}$ mile from school; 1 mile from Methodist church; 3 miles from butter factory and milk condensing plant. Highways hilly but good. Nearest large village, Delhi, 4 miles distant, reached by highway. Surface of farm rolling. Altitude about 2,000 feet. Soil, red slate. Acres in meadow, 30; in natural pasture, 100; in timber, 35, maple, beech and basswood. Acres tillable, 75. Fruit, 30 trees, different varieties. Best adapted to hay, oats, corn and buckwheat. Fences, stone wall. House in good condition. Outbuildings, barn, wagonhouse and henhouse. Watered by springs. Occupied by tenant. Reason for selling, owner has another farm. Price, \$3,750. Terms, will take mortgage for \$2,000 at 5%. Address Hewitt and Black, agents, Delhi, N. Y.

*No. 300 — Farm of 610 acres, located 6 miles from Delhi P. O., R. D. 3; 6 miles from railway station at Delhi, on line of O. & W. R. R.; 1 mile from school; 3 miles from Catholic and Protestant churches; 6 miles from butter factory and milk station. Highways, dirt road. Surface of farm, rolling. Altitude, about 1,800 feet. Soil, red slate. Best adapted to hay, oats, corn and potatoes. Fences, stone wall, fair condition. House, $1\frac{1}{2}$ stories, fair condition. Good sized barn, fair condition; 2 saphouses, good condition. Watered by spring. Occupied by tenant. Reason for selling, owner is a lawyer and cannot attend to farm. Price, \$12,000. Terms, \$4,000 down, balance on mort-

gage. All sap equipments go with farm. Address Hewitt & Black, agents, Delhi, N. Y.

*No. 301 — Farm of $14\frac{1}{2}$ acres, located 1 mile from Delhi P. O. and railway station, on line of O. & W. R. R.; 1 mile from school, churches, butter factory and milk station. Highways, good dirt road. Surface of farm, rolling. Altitude, about 1,400 feet. Soil, red slate. Acres in meadow, 12; in timber, 2, hard wood; acres tillable, 12. Fruit, apples and pears. Best adapted to hay, corn, oats, potatoes, etc. Fences, stone wall, fair condition. House, $1\frac{1}{2}$ stories, 6 rooms, fair condition. Outbuildings, small barn, 20x30, fair condition. Watered by well and spring. This farm is one mile from the Delaware River. Occupied by owner. Reason for selling, owner is a woman and cannot attend to it. Price, \$1,750. Terms, \$750 down, balance on mortgage. Address Hewitt & Black, agents, Delhi, N. Y.

*No. 302 — Farm of 97 acres, located $2\frac{1}{2}$ miles from Delhi P. O. and railway station, on line of O. & W. R. R.; $\frac{1}{2}$ mile from school and butter factory; $2\frac{1}{2}$ miles from High school, Catholic church, Protestant churches and milk station. Surface of farm, rolling. Soil, red slate. Acres in natural pasture, 72; in timber, 25, hardwood; acres tillable, 70. Fruit, 50 apple trees, also pears and plums. Best adapted to hay, oats, corn, potatoes, etc. Fences, stone wall, fair condition. House, 2 stories, 12 rooms, good condition. Outbuildings, barn, milkhouse, icehouse, woodhouse, henhouse and wagon house, all in fair condition. Watered by spring. Occupied by owner. Reason for selling, ill health and advanced age of owner. Price, \$3,250. Terms, \$1,250 cash, balance on mortgage. Address Hewitt & Black agents, Delhi, N. Y.

*No. 303 — Farm of 85 acres, located $4\frac{1}{2}$ miles from Delhi P. O., R. D. 2, and railway station, on line of O. & W. R. R.; $\frac{1}{2}$ mile from school, $4\frac{1}{2}$ miles from churches, butter factory, milk station and milk condensing plant. Surface of farm, rolling. Soil, red slate. Acres in meadow, 35; in natural pasture 35; in timber 15, hardwood; acres tillable, 60. Fruit, 50 apple trees, also plums and cherries. Best adapted to

* Farm is in hands of agent or real estate dealer.

hay, corn, oats and potatoes. Fences, stone wall, fair condition. House, 2 stories, 6 rooms. Outbuildings, barn, with stables for 18 cows; wagon house, hogpen, henhouse and icehouse, all in fair condition. Watered by spring. Occupied by tenant. Reason for selling, ill health of owner. Price, \$1,650. Terms, \$500 down, balance on mortgage at 5 per cent. Address Hewitt & Black, agents, Delhi, N. Y.

TOWN OF FRANKLIN

Population 2,403

No. 304 — Farm of 116 acres, located 2 miles from railway station at Franklin, on line of O. & W. R. R.; $1\frac{1}{2}$ miles from school; 1 mile from Protestant church and butter factory; 2 miles from milk station; 7 miles from milk condensing plant. Highways, somewhat hilly, but good. Nearest large village, Walton, 7 miles distant, population, about 4,000, reached by rail and highway. Surface of farm, rolling. Altitude, about 2,400 feet. Soil, red slate. Acres in meadow, 25; in natural pasture, 75; in timber, 16, cherry, maple, beech and birch; acres tillable, 60. Fruit, 20 apple trees. Best adapted to potatoes, buckwheat, oats, corn, etc. Fences, barbed wire and stone wall, fair condition. House, 26x26, fair condition. Outbuildings, barn, 40x46, fair condition, chicken house, 10x12. Watered by well and spring. Occupied by tenant. Reason for selling, owner has another farm. Price, \$2,400. Terms, \$200 down. Address Mabel A. Ogden, Walton, N. Y. Owner will rent.

*No. 305 — Farm of 50 acres, located $2\frac{1}{2}$ miles from Franklin P. O.; 3 miles from railway station at Franklin, on line of O. & W. R. R.; 5 miles from railway station at Unadilla, on line of D. & H. R. R.; $\frac{1}{4}$ mile from school; $2\frac{1}{2}$ miles from Protestant churches. Highways, good dirt road. Surface of farm, rolling. Altitude, 1,200 feet. Soil, red slate. Acres in natural pasture, 48; in timber, 2, hardwood; acres tillable, 40. Fruit, 25 apple trees, also pears and plums. Best adapted to hay, oats, corn, potatoes, etc. Fences, wire. House, $1\frac{1}{2}$ stories, 10 rooms, piazza 10x50, built 1911. Outbuildings, barn, henhouse, woodhouse and silo, good condition. Watered by spring. Occupied by owner. Reason for selling, owner has another

farm. Price, \$2,250. Terms, one-half down. This farm is near 65-acre lake, fine fishing. Address Hewitt & Black, agents, Delhi, N. Y.

*No. 306 — Farm of 212 acres, located 4 miles from Franklin P. O., and railway station, on line of O. & W. R. R.; $\frac{1}{2}$ mile from school; 4 miles from Protestant churches; 1 mile from butter factory and milk station. Highways, good dirt road. Surface of farm, rolling. Altitude, about 1,500 feet. Soil, red slate. Acres in meadow, 50; in natural pasture, 100; in timber, 60, hardwood; acres tillable, 150. Some fruit. Best adapted to hay, oats, corn, potatoes and buckwheat. Fences, wall, good. House, nearly new, good condition. Outbuildings, new barn, silo, wagon house, henhouse, hoghouse, granary, all newly painted. Watered by springs. Occupied by tenant. Fine lake for fishing located near farm. For price and terms address Hewitt & Black, agents, Delhi, N. Y.

TOWN OF HAMDEN

Population 1,373

*No. 307 — Farm of 235 acres, located 3 miles from DeLancy P. O., and railway station, on line of O. & W. R. R.; 60 rods from school; 3 miles from Catholic church, Protestant churches, butter factory, milk station and milk condensing plant. Highways, good, dirt roads. Nearest large village, Delhi. Surface of farm, rolling. Altitude, about 1,800 feet. Soil, red slate. Acres in meadow, 50; in natural pasture, 110; in timber, 75, hardwood, maple, birch and beech; acres tillable, 100. Fruit, 100 trees of apples, plums, pears and cherries. Best adapted to hay, oats, corn, potatoes and millet. Fences, stone wall and wire. House, $1\frac{1}{2}$ stories, 11 rooms, good piazza. Outbuildings, barn has room for 56 head of cattle and 4 horses, 40x70; wagon house, concrete milkhouse, toolhouse and hog pen. Watered, house by running water; barns, by spring; fields, by springs. Occupied by owner. Price, \$5,500. Terms, will take mortgage for \$2,000 at 5 per cent. Address Hewitt & Black, agents, Delhi, N. Y.

*No. 308 — Farm of 221 acres, located $\frac{1}{4}$ mile from Hamden P. O., and railway station, on line of O. & W. R. R.; $\frac{1}{4}$ mile from school, church, butter fac-

* Farm is in hands of agent or real estate dealer.

tory, milk station and milk condensing plant. Highways, good dirt road. Surface of farm, pasture rolling, meadows flat. Altitude, about 1,400 feet. Soil, red slate and loam. Acres in meadow, 60; in timber, 60; balance in natural pasture; acres tillable, 125. Fruit, 50 trees of different varieties. Best adapted to hay, oats, corn and potatoes. Fences, stone wall, some wire. House, 2 stories, 9 rooms, good piazza. Outbuildings, good barn, 2 silos, wagon house, hen-house, woodhouse, etc., all in good condition. Watered by springs. This farm borders on the west branch of Delaware River. Occupied by owner. Reason for selling, ill health of owner. Price, \$11,000. Terms, \$5,000 down, balance on mortgage at 5 per cent. Address Hewitt & Black, agents, Delhi, N. Y.

TOWN OF HANCOCK

Population 5,191

No. 309 — Farm of 127 acres, located $\frac{1}{4}$ mile from French Woods P. O., 4 miles from railway station at Lordville, on line of Erie R. R.; $\frac{1}{4}$ mile from school, Catholic and Protestant churches; 4 miles from milk station. Highways, good dirt roads. Nearest large village, Hancock, 8 miles distant, population about 2,500, reached by highway. Surface of farm rolling. Altitude about 1,200 feet. Soil, red shell, very good. Acres in meadow, 25; in natural pasture, 60; in timber, 15, hardwood. Acres tillable, 100. Fruit, large orchard of apples, pears and plums. Best adapted to hay, potatoes, etc. Fences, wire and stone, fair condition. House, almost new, 29 rooms. Outbuildings, good sized barn, good condition. Watered, house by running water, barns by spring, fields by lake. Ninety-six acres in lake and $\frac{1}{3}$ of it belongs to this property. Reason for selling, owner wants to work at his trade. Toilet and bathroom in house. Price, \$8,500. Address Frank L. Gardner, French Woods, N. Y.

TOWN OF HARPERSFIELD

Population 1,244

No. 310 — Farm of 252 $\frac{1}{2}$ acres, 1 mile from Harpersfield P. O.; 4 miles from railway station at Stamford, on line of U. & D. R. R.; 12 miles from Richmondville, on D. & H.; 20 miles from Oneonta; $\frac{1}{4}$ mile from school; 1 mile from churches; 3 miles from butter factory; 2 miles from milk station. Highways,

fairly good, not hilly. State road to be built $\frac{1}{2}$ mile from farm. Nearest village Stamford, 1,000 population, 4 miles distant; Oneonta, nearest city, population 10,000. Former reached by highway, latter by rail and highway. Surface of farm, partly rolling, partly level. Soil, good for grass. Acres in meadow, 70; in pasture, 150; in timber, 35, beech, maple, pine and hemlock; acres tillable, 150. Fruit, good young apple orchard, pears. Best adapted to grass, oats, corn, potatoes, rye and buckwheat. Fences, mostly stone wall, in good condition. House, large, 12-room, in good condition. Barns, 2 large cowbarns, horsebarn, calfstable, hogpen, granary and tool house. Buildings newly painted. Watered, house, by well; barn, by well and springs; fields, by creeks and springs. Delaware River 4 miles distant. Catskill Mountains 5 miles distant. Possession given at any time. Will sell 40 cows, team, tools and crops, or farm alone to suit buyer. Hay, straw and all fodder belongs to owner of farm and will be sold with farm, if purchaser desires, and owner will also sell as much of personal property as desired. Reason for selling, advanced age of owner. Price, \$6,000. Terms, part cash, balance to suit buyer. Clear title guaranteed. Owner will rent for cash, on shares or with option to buy. Name and address of owner, M. S. Wilcox, Jefferson, N. Y.

No. 311 — Farm of 140 acres, located $\frac{1}{4}$ mile from Stamford P. O. and $\frac{1}{2}$ mile from railway station at Stamford, on line of U. & D. R. R.; $\frac{1}{2}$ mile from school, churches, butter factory and milk station. Highways, State road. Nearest city, Oneonta, population about 10,000, 33 miles distant, reached by rail and highway. Surface of farm rolling. Altitude about 1,800 feet. Soil, red rock mostly. Acres in meadow, about 30; in natural pasture, 35; in timber, 15, maple and beech. Acres tillable, 65. Fruit, an old and young orchard. Best adapted to hay, grain and gardening. Fences, mostly stone, fair condition. House, medium size, rather old. Outbuildings, good size barn with silo, good condition. Watered by springs and stream. Occupied by owner. Reason for selling, owner in other business. Price, \$6,500. Terms, $\frac{1}{2}$ down, balance on bond and mortgage. Address John P. Grant, Stamford, N. Y.

TOWN OF KORTRIGHT

Population 1,481

No. 312 — Farm of 244 acres, located 3 miles from Bloomville P. O. and railway station, on the line of the U. & D. R. R.; $\frac{1}{8}$ mile from school; 3 miles from churches and milk station. Highways, hilly but exceptionally good. Nearest city, Oneonta, population 10,000, 17 miles distant, reached by rail or highway. Soil, alluvial deposit. Acres in meadow, 80; in natural pasture, 98; in timber, 66; acres tillable, 150. About 600 apple trees, 20 pear trees and 20 plum trees. Best adapted to corn, oats, buckwheat, potatoes and grass. Fences, stone wall and wire, in fair condition. House, new, 14 rooms, all modern improvements, hot and cold water, bathroom and stationary wash tubs, large veranda. Barns, one 36x60, fair condition; one 36x48, good condition; one, 30x40, fair condition; stables have concrete floors; new milk house. Watered, house, by never-failing spring; barns and fields, by spring and creek. Occupied by owner. This farm has been in family since 1816 and always occupied by owner. One of the best grass farms in the state. Very fertile. Reason for selling, poor health of owner's wife, and other business interests. Price, \$6,500. Terms, part cash, balance on easy terms. Will sell stock and tools, if desired. Address G. Husted, Bloomville, Delaware Co., N. Y.

No. 313 — Farm of 132 acres, located 12 miles from Delhi P. O., R. D. 2; 2 miles from railway station at Kortright, on line of the U. & D. R. R.; $1\frac{1}{4}$ miles from school; $2\frac{1}{2}$ miles from United Presbyterian church; 2 miles from milk station. Highways, good. Nearest city, Oneonta, population 10,000, distant 14 miles by rail and highway. Surface, part hilly, meadows, nearly level. Altitude, 2,000 feet. Soil, red slate, good. Thirty acres of meadow; 62 acres of natural pasture; 40 acres of timber, beech, maple, ash, basswood; acres tillable, 65. Has 20 apple, 6 plum and 3 large pear trees. Land is adapted to raising of buckwheat, oats, corn and potatoes. Fences, of stone and wire, in good condition. House, 25x35, good condition. Barn, 30x50, with wing, 20x20, good condition, with wagonhouse, 16x24, fair condition. House has water; barns have troughs; fields have springs. The

Delaware River is 7 miles, the Susquehanna, 11 miles distant. Total value of wood and timber will pay for farm. Good market for milk or butter, near stores and small village. Land is smooth and free, good place for poultry. Will sell personal property also, if desired. Occupied by owner. Reason for selling, owner desires a larger farm. Price, \$2,200. Terms, $\frac{1}{2}$ cash, balance on easy terms. Address Albert F. Brown, Delhi, N. Y., R. D. 2.

*No. 314 — Farm of 220 acres, located 3 miles from Bloomville P. O., R. D. 1, and railway station, on line of U. & D. R. R.; $\frac{1}{4}$ mile from school; 3 miles from church, butter factory and milk station. Highways, good dirt road. Nearest large village, Delhi, population about 2,000, 11 miles distant, reached by highway. Surface of farm rolling. Altitude about 1,600 feet. Soil, red slate, good. Acres in meadow, 100; in natural pasture, 150; in timber, 70, maple and hardwood. Acres tillable, 150. Fruit, 600 trees, apples, pears and plums. Best adapted to grass, potatoes, grain, etc. Fences, stone wall and wire, fair condition. House, 14 rooms, all modern improvements, new. Outbuildings, barn, 36x60, fair condition; barn, 36x48, good condition; barn, 30x40, fair condition; stables have concrete floors, new milk house. Watered by spring and creek. Occupied by owner. Reason for selling, poor health of owner's wife. Price, \$7,000. Terms, $\frac{1}{2}$ cash, balance at 5%. Address Hewitt & Black, agents, Delhi, N. Y.

*No. 315 — Farm of 200 acres, located $2\frac{1}{2}$ miles from Bloomville P. O. and railway station, on line of U. & D. R. R.; $\frac{1}{4}$ mile from school; 1 mile from church; $2\frac{1}{2}$ miles from butter factory and milk station. Highways somewhat hilly but good. Nearest large village, Delhi, 12 miles distant, population about 2,000, reached by highway. Surface of farm rolling and hilly. Soil, red slate. Acres in meadow, 60; in natural pasture, 110; in timber, 30, hardwood. Acres tillable 125. Fruit, 100 trees, different varieties. Best adapted to hay, oats, corn and potatoes. Fences, stone wall, good condition. House, 2 stories, 12 rooms, fair condition. Outbuildings, barn, 54x72; old barn, 34x72; silo; hogpen; henhouse and sugarhouse. Watered by spring. Good trout stream near farm. Occupied

* Farm is in hands of agent or real estate dealer.



FIG. 9.—HOUSE ON FARM 312, TOWN OF KORTRIGHT, DELAWARE COUNTY.



FIG. 10.—HOUSE ON FARM 401, TOWN OF OPPENHEIM, FULTON COUNTY.

by owner. Price, \$6,300. Terms, \$3,000 cash, balance on mortgage at 5%. House and barn lighted by acetylene gas. Price includes 250 sap buckets, evaporator and other utensils. Address Hewitt & Black, agents, Delhi, N. Y.

*No. 316 — Farm of 200 acres, located 5 miles from Bloomville P. O. and 5 miles from railway station at Bloomville or Delhi, on line of U. & D. or O. & W. R. R.; $1\frac{1}{8}$ miles from school; 5 miles from Catholic and Protestant churches; 5 miles from butter factory and milk condensing plant; $\frac{1}{2}$ mile from milk station. Highways in good condition. Surface of farm mostly level. Altitude about 1,600 feet. Soil, red slate. Acres in meadow, 60; in natural pasture, 120; in timber, 20, hardwood. Acres tillable, 100. Fruit, 75 fruit trees, all young, apples, pears, plums, cherries, etc. Best adapted to corn, oats, hay, millet and potatoes. Fences, stone wall, good condition. House, 14 rooms, fine large piazza. Outbuildings, new barn, 40x70, cement floor, 3 stories, room for 60 head of cattle, good wagonhouse. Watered by springs. Occupied by owner. Reason for selling, owner has another large farm. Price, \$6,500. Terms, \$4,500 down, balance on mortgage at 5%. Address Hewitt & Black, agents, Delhi, N. Y.

TOWN OF MASONVILLE

Population 1,053

*No. 317 — Farm of 100 acres, located $2\frac{1}{2}$ miles from Masonville P. O.; 8 miles from railway station at Sidney, on line of D. & H. and O. & W. R. R.; 1 mile from school; $2\frac{1}{2}$ miles from churches and from butter and cheese factories. Highways, hilly, in good condition. Nearest village, Sidney, population 3,000, 8 miles distant, reached by highway. Surface, rolling. Acres in meadow, 50; in natural pasture, 40; in timber, 10; acres tillable, 90. Fences, poor. Eight-room house, poor condition. Outbuildings in poor condition. Watered, running water; fields, by springs. Unoccupied. Reason for selling, owner has other business. Price, \$1,100. Terms, \$600 cash, mortgage for \$500. Address F. L. Ostrander, agent, Masonville, Delaware County, N. Y.

*No. 318 — Farm of 75 acres, located $3\frac{1}{2}$ miles from Masonville P. O.; 9 miles

from railway station at Sidney, on line of the D. & H. and O. & W. R. R.; near school; $3\frac{1}{2}$ miles from churches; $3\frac{1}{2}$ miles from butter and cheese factories. Highways, hilly, but in good condition. Nearest large village, Sidney, population 3,000, 9 miles distant, reached by highway. Surface, rolling and partially hilly. Acres in meadow, 25; in natural pasture, 40; in timber, 10; acres tillable, 60. Fences, wire and stone walls, in good condition. House, 8 rooms, fair condition. Barnroom for 15 cows and 3 horses. Watered, house, by running water and wells; fields, by springs. Occupied. Reason for selling, owner has other business. Price, \$1,500. Terms, \$500 cash, \$1,000 mortgage at 5 per cent. Address F. L. Ostrander, Masonville, Delaware County, N. Y.

TOWN OF MEREDITH

Population 1,393

No. 319 — Farm of 173 acres, located 7 miles from Delhi P. O., R. D. 2; 3 miles from railway station at East Meredith, on line of U. & D. R. R.; 3 miles from church; 1 mile from butter factory and milk station; 7 miles from milk condensing plant. Nearest city, Oneonta, population 10,000, 12 miles distant. Surface of farm, rolling. Altitude, about 1,800 feet. Acres in meadow, 50; in natural pasture, 10; in timber, 50, hardwood; acres tillable, 120. Fruit, apples. Best adapted to hay and potatoes. Fences, stone and wire, good condition. House, 16 rooms, good condition. Barns, in fair condition. Watered by living spring. Occupied by owner. Reason for selling, poor health of owner. Price, \$6,500, including hay, stock, etc. Address Miss Johanna R. Spier, Delhi, N. Y., R. D. 2.

*No. 320 — Farm of 114 acres located 4 miles from East Meredith P. O., R. D. 3 and railway station, on line of U. & D. Ry., 1 mile from school, 4 miles from Catholic and Protestant churches, $\frac{1}{2}$ mile from milk station, 4 miles from milk condensing plant. Highways, all good, dirt roads. Nearest city, Oneonta, 12 miles distant, population about 10,000, reached by rail from East Meredith. Surface of farm rolling and smooth. Altitude about 1,800 ft. Soil, red slate. Acres in meadow, 30; in timber, 18; hardwood, some pine and 250 maples for sugar. Acres tillable, 60. Good fruit,

* Farm is in hands of agent or real estate dealer.

many varieties. Best adapted to corn, hay, oats, buckwheat and millet. Fences, stone wall, good condition. House, 12 rooms, 2 stories, all modern improvements. Outbuildings, barn, 34x60, with wing, 30x40, wagon house, hen house and hog pen, all in good repair. Watered by springs. Occupied by owner. Price, \$6,000. Terms, $\frac{1}{2}$ cash, balance on mortgage at 5%. Address Hewitt & Black, agents, Delhi, N. Y.

TOWN OF MIDDLETOWN

Population 3,802

*No. 321—Farm of 135 acres, located 1 mile from Arkville P. O. and railway station, on line of U. & D. Ry.; school next to farm, 1 mile from Methodist and 2 miles from Episcopal church; creamery on farm. Nearest large village, Margaretville, 2 miles distant, population about 1,200, reached by rail and highway. Surface of farm rolling. Soil, loam. Acres in meadow, 50; in natural pasture, 65; in timber, 20, hardwood. Acres tillable, 100. Fruit, 100 trees, apples, pears, plums and cherries. Best adapted to hay, oats, corn, potatoes, etc. Fences, stone wall, good condition. House, 2 stories, 17 rooms, piazza, 30x60, hardwood floors. Outbuildings, barn with stables for 50 cows, wagon house, horse stable, blacksmith shop, hog house, hennery and store house. Watered by spring. Occupied by tenant. Reason for selling, owner has other farms. 4 hours to New York City by rail. Price, \$16,500. Terms, $\frac{1}{2}$ cash. Address Hewitt & Black, agents, Delhi, N. Y.

*No. 322—Farm of 156 acres, located 1 mile from New Kingston P. O., 3 miles from railway station at Dunraven, on line of D. & U. Ry., 1 mile from school, churches, butter factory and milk station. Highways, dirt road. Nearest large village, Margaretville, 5 miles distant, population about 1,200, reached by highway. Surface of farm rolling. Soil, red slate. Acres in natural pasture, 136; in timber, 20, hardwood. Acres tillable, 100. Fruit, 100 apple trees, pears, plums, etc. Best adapted to hay, corn, potatoes, oats, etc. Fences, stone wall, fair condition. House 10 rooms, 2 stories. Outbuildings, good size barn, wagon house, hog house, hen house, wood house and granary, all in good condition. Watered by spring. Unoccupied. Reason

for selling, owner lives in Colorado. Price, \$3,500. Terms, \$1,200 down, balance on mortgage at 5%. Address Hewitt & Black, Delhi, N. Y.

*No. 323—Farm of 135 acres, located 1 mile from Arkville P. O. and railway station, on line of U. & D. Ry.; $\frac{1}{4}$ mile from school, 1 mile from churches. Nearest large village, Margaretville, $2\frac{1}{2}$ miles distant, population about 1,200, reached by highway. Surface of farm rolling. Soil, loam. Acres in meadow, 40; in natural pasture, 70; in timber, 25, hardwood. Acres tillable, 100. Fruit, 50 apple trees. Best adapted to oats, corn, hay and potatoes. Fences, stone wall, good. House, 2 stories, 8 rooms. Outbuildings, barn in first-class condition, room for 30 cows, 4 horse stalls. Delaware river runs through farm. Occupied by tenant. Reason for selling, owner has two other farms. Price, \$6,500. Terms, \$2,500 down, balance on mortgage. Address Hewitt & Black, agents, Delhi, N. Y.

TOWN OF SIDNEY

Population 4,148

No. 324—Farm of 135 acres, located $\frac{1}{4}$ mile from post office and railway station at Franklin Depot, on line of O. & W. R. R.; $\frac{1}{4}$ mile from school and 2 creameries; $2\frac{1}{2}$ miles from condensing plant. Highways, good. Nearest large village, Walton, population 3,500, 10 miles distant, reached by rail and highway. Sidney Center, population 600, is $2\frac{1}{2}$ miles from farm. Sidney, population about 3,000, is 10 miles distant from farm. Surface, nearly level, part slightly rolling. Soil, red and part rich loam. Acres in meadow, 45; in natural pasture, 55; in timber, 35, hemlock, hard maple and basswood; acres tillable, 100. Fruit, apples. Best adapted to grass, oats, corn, buckwheat, millet and potatoes. Fences, wire, board and stone wall. House, 12 rooms, good condition. Outbuildings: barn, 42x64, cow stable attached, with new concrete floors; barn, 26x36; 5 good horse stalls, silo. Watered, house by never-failing spring water, which runs to house; barns and fields, by spring and creek. Occupied by owner. Reason for selling, advanced age of owner. Price, \$4,900. Terms, \$1,200 down, balance on easy terms, 5%. Address M. B. Fish, Sidney, N. Y.

* Farm is in hands of agent or real estate dealer.

DUTCHESS COUNTY

Area, 810 square miles. Population, 87,661. Annual precipitation, 54.1 inches. Annual mean temperature 50.9°. Number of farms, 3,600. County seat, Poughkeepsie.

This county lies on the eastern line of the state bounded by Connecticut on the west and by the Hudson River on the east, about midway between Albany and New York City.

Its surface is principally rolling and hilly. A wide valley running north and south through the entire portion of the county, bounded on the east by the Taghkanick Mountains and on the west by the Matteawan and Fishkill Range. Within this valley lies some of the finest farms of the state. The county is rich in mineral rocks and near its center there are quarries of marble, pure white fine grain and susceptible to high polish. The soil of the county is generally of a fine quality of sandy and gravelly loam. Agriculture is the leading industry and offers attractions to the farmer on account of the variety and fertility of the soil and the nearness to the markets of New York City. As choice apples as can be grown anywhere are grown in this county, many of which are exported to Europe. The principal crops are corn, 744,303 bushels; oats, 468,039 bushels; wheat, 32,920 bushels; buckwheat, 54,504 bushels; rye, 80,229 bushels; potatoes, 300,275 bushels; hay and forage 122,406 tons. Domestic animals are reported as follows: Dairy cows, 31,241; horses, 10,945; swine, 19,798; sheep, 14,719; poultry, 236,074. The average price of farm land with buildings is \$58.52 per acre. The total valuation of all farm property is \$32,968,710, an increase of nearly \$8,000,000 over the value given in the census of 1900. This increase is exceeded only by six other counties of the state. The dairies of the county produced 18,869,564 gallons of milk and the receipts for the sale of dairy products were \$2,084,655.

There are twenty-nine agricultural organizations in the county, including twenty-four granges; also thirty-two milk stations and factories. The educational advantages are extraordinary, there being 183 district schools, several standard high schools and St. Stephen's College at Annandale. Vassar, one of the leading women's colleges in the country is located at Poughkeepsie, together with private and military academies. Dutchess County presents great possibilities for farm investment and general farming, in common with a large number of the other counties of the state.

TOWN OF AMENIA

Population 2,123

No. 325—Farm of 231 acres, 2 miles from Amenia P. O. and railway station, on line of Harlem R. R.; $\frac{1}{4}$ mile from school; 2 miles from churches; R. D. Highways, good. Rolling surface. Soil, gravel and loam. Acres in meadow, 140; natural pasture, 60; timber, 31. Fruit, apples and pears. Best adapted to grain. Fences, rail and wire, in good condition. 15-room house, bath and steam heat, in good condition. Cow barn, 26x70; horse barn, 28x40. Water piped to house and barn from spring. Trout brook on farm. Reason for selling, poor health of owner. Price, \$15,000. Terms easy. Address Chas. H. Juckett, Amenia, N. Y.

No. 326—Farm of 300 acres, located $\frac{3}{4}$ mile from Wassaic P. O.; $\frac{3}{4}$ mile from railway station at Wassaic, on line of Harlem Division of N. Y. C. & H. R. R. R.; $\frac{3}{4}$ mile from school, churches and milk station. Highways, good. Nearest village, Amenia, population 800,

1 $\frac{1}{2}$ miles distant. Surface of farm, rolling. Soil, limestone. Fruit, apples, pears, plums, cherries, peaches, berries. Best adapted to hay, grain and vegetables. Fences, good. House, large, in good condition. Barns, good. Watered, house, by well; barns, by spring; fields, by spring and stream. Occupied by owner. Reason for selling, advanced age of owner. Price, \$6,000. Terms easy. Address Herbert Eggleston, agent, Millerton, N. Y.

No. 327—Farm of 20 acres, located in South Amenia, 2 miles from railway station at Wassaic, on line of Harlem R. R.; $\frac{1}{4}$ mile from school; 20 rods from Presbyterian church; 2 miles from milk station and condensing plant. Highways, good. Nearest village, Amenia, population 800, 5 miles distant, reached by highway. Surface of farm, level. Altitude, 500 feet. Soil, loam. Acres in meadow, 15; acres tillable, 20. Fruit, 150 apple trees. Best adapted to corn, potatoes and grass. Fences, wire

and stone wall. House, large, 2 stories, in fair condition. 1 barn, 5 horse stalls and 2 cow stalls, wagonhouse. Watered, house and barn, by well; fields, by creek. Creek bounds property on the west. Reason for selling to close an estate. Price, \$4,000. Terms, cash. Have a large house, in good repair, 13 rooms and 2 halls, long piazza, small barn and woodhouse. One acre of land which can be bought with above farm for \$6,000. This is directly connected with other land and has been run in connection with same for a number of years. Address E. G. Reynolds, Dover Plains, N. Y. Owner will rent.

* No. 328—Farm of 20 acres, located $2\frac{1}{2}$ miles from Amenia P. O. and railroad station, on line of Harlem R. R.; $2\frac{1}{2}$ miles from school; 2 miles from Methodist and Catholic churches; $2\frac{1}{2}$ miles from milk station. Highways, good. Nearest village, Amenia, population 800, $2\frac{1}{2}$ miles distant, reached by highway only. Surface, rolling. Soil, gravelly loam. Altitude, 1,200 feet. 15 acres tillable; 5 acres of timber. Fruit trees, about 20 plums, pears, apples and cherries. Land best adapted to raising fruit and vegetables. Rail fences, in good condition. 2-story house, 18x25, 4 rooms on first floor and 2 on the second, with cellar and attic, in good condition. Main barn, 12x20, stable room for 1 horse and cow, wagons, hay and grain, also poultryhouse. House has well water; barn has spring water; fields have springs. Occupied by owner. Reason for selling, owner desires larger farm. Price, \$1,300. Terms, \$800 cash, balance on mortgage. Address Herbert Eggleston, Millerton, N. Y.

No. 329—Farm of 263 acres, $\frac{1}{2}$ mile from South Amenia P. O., R. D.; $2\frac{1}{2}$ miles from Wassaic, on line of Harlem R. R. Highways, good. Soil, gravelly loam. Acres, meadow, 175; tillable, 175; natural pasture, 40; timber, 50, chestnut, oak, maple and hickory. Fruit, 100 apple trees, Red Astrachan, Greening, Maiden Blush, etc. Adapted to all crops. Fences, wire, in good condition. House, 2-story, 8-room, with lean-to, all new. Barn, large, 3 stories, in good condition. Premises watered by springs and brook. Farm lies in valley $1\frac{1}{2}$ miles wide, at the foothills of the Taghkanic range. Reasons for selling, to close an estate.

Price, \$15,000. Terms, part cash, balance on mortgage. Address Edward G. Reynolds, Dover Plains, N. Y.

* No. 330—Farm of 130 acres, located 3 miles from Amenia P. O. and railway station, on line of Harlem R. R.; 3 miles from churches of all denominations, school and milk station. Highways, good. Surface of farm, practically level. Altitude about 700 feet. Soil, limestone loam. Acres in meadow, 85, in natural pasture, 15; in timber, 12. Acres tillable, 115. Fences, good. House, 2-stories, 9 rooms, good condition. Outbuildings, basement barn, stable for 20 cows, horse barn, stable for 6 horses, good condition. Watered by springs and streams. Small river runs through farm. Occupied by tenant. Reason for selling, owner lives too far away to attend to farm. Price, \$4,500. Terms, $\frac{1}{2}$ cash. Address Herbert Eggleston, Agent, Millerton, N. Y.

No. 331—Farm of 250 acres, located 3 miles from South Amenia P. O., 5 miles from railway station at Wassaic, on line of Harlem R. R., 2 miles from school, 3 miles from churches, 5 miles from milk station. Surface of farm, hilly. Altitude about 500 feet. Acres in meadow, 125; in natural pasture, 125; in timber, 100, chestnut and oak. Acres tillable, 125. Adapted to corn and oats. Fences, wire and stone wall. House, $1\frac{1}{2}$ stories, 7 rooms, fair condition. Outbuildings, barn large enough to hold 40 head of cows, fair condition. Watered, house by running water, fields by brooks. Unoccupied. Reason for selling, owner has other business. Price, \$3,500. Terms easy. Address Anthony J. Habeeb, 463 Gates Ave., Brooklyn, N. Y.

TOWN OF DOVER

Population 2,016

No. 332—Farm of 189 acres, situated 3 miles from Dover Plains, on Harlem branch of the N. Y. C. & H. R. R. R. Soil, red loam. Acres of meadow, 80; acres of pasture, 109. House, 15 rooms, in fair condition. Barns and outbuildings, ample for the use of the farm and in fair condition. Fences, stone wall and wire, in fair condition. Watered by wells and springs. Farm will keep 45 head of cattle and 5 horses. Price, \$50 per acre. Terms to suit the pur-

* Farm is in hands of agent or real estate dealer.

chaser. Name and address of owner, John Coyle, Jr., Dover Plains, N. Y.

TOWN OF FISHKILL

Population 13,858

* No. 333—Farm of 63 acres, located $2\frac{1}{2}$ miles from Fishkill-on-Hudson P. O., 3 miles from railway station at Fishkill Landing, on line of N. Y. C. & H. R. R. R., $\frac{1}{2}$ mile from school, 1 mile from Catholic and Protestant churches, $1\frac{1}{2}$ miles from milk station. Highways, State road to within $\frac{1}{4}$ mile of farm. Surface of farm, rolling. Altitude, 200 to 300 feet. Soil, Dutchess silt. Acres in meadow, 16; in natural pasture, 18. Fruit, 500 peach trees, 9 years old, 500 8 years old, 700 7 years old, 300 5 years old, and 3 acres of apples. Best adapted to peaches. Fences, some wire and some stone wall, good. House, 6 rooms, good condition. Outbuildings are ample for size of farm and in good condition; 1 barn new. Watered by well and cistern. Occupied by owner. Reason for selling, owner has too much land. Price, \$9,450. Terms, $\frac{1}{2}$ cash. Address Edwin J. Webb, agent, Fishkill-on-Hudson, N. Y.

TOWN OF HYDE PARK

Population 3,019

No. 334—Farm of 90 acres, 2 miles from Staatsburg P. O.; 2 miles from railway station at Staatsburg, on line of N. Y. C. & H. R. R. R.; $1\frac{1}{2}$ miles from school; 2 miles from Episcopal, Methodist and Catholic churches; 2 miles from milk station, and condensing plant. Highways, good. Nearest village, Staatsburg, population 1,000, 2 miles distant, reached by highway. Surface of farm, rolling. Soil, productive sandy loam and clay. Acres in meadow, 20; in natural pasture, 15; in timber, 20, oak, pine, hickory and chestnut; acres tillable, 45. Fruit, apples, pears, cherries and berries, enough for family use. Adapted to all crops grown in this climate, corn, rye, oats and potatoes. Fences, stone and rail posted wire. House, 2-stories, 10 rooms, 30x40, in good condition. Barn, 28x36, with basement, cow shed attached; carriage house, 28x32, with basement; tenant house, 4 rooms. Watered, house by well and cistern; barns, by well; fields, by spring and running stream. Bordered by Hudson River on the west; view of the Hudson from

house. This is an ideal place for one who desires a small place, or if a larger place is desired, will sell 215 acres with it. Occupied by tenant; lease expires April 1, 1913; will sell subject to lease. Reason for selling, to settle an estate. Price, \$9,000. Address Geo. W. Rymph, Hyde Park-on-Hudson, N. Y.

No. 335—Farm of 215 acres, located 2 miles from Staatsburg P. O. and railway station, on line of N. Y. C. & H. R. R. R., $1\frac{1}{2}$ miles from school, 2 miles from churches, milk station and milk condensing plant. Highways, good State road. Surface of farm, rolling and level. Soil, sandy loam and clay loam. Acres in meadow, 35; in natural pasture, 25; in timber, 80, pine, chestnut, oak and hickory. Acres tillable, 75. Fruit, 75 apple trees, also cherries, pears and plums. Best adapted to corn, wheat, rye and oats. Fences, stone wall, post and wire. House, 28x38 with addition, 8 rooms, good condition. Outbuildings, hay and stock barn, 38x50, carriage house with basement, 32x28, ice house, creamery attached, sheep barn, 38x20; tenement house, 4 rooms, all in good condition. Watered by cistern, well, springs and running streams. Hudson River forms the west boundary of this property. Occupied by tenant. Reason for selling, advanced age and ill health of owner. Price, \$20,000. Terms, \$12,000 cash, balance of purchase price on bond and mortgage at 5%. Address Geo. W. Rymph, Hyde Park-on-the-Hudson, N. Y., Box 167.

TOWN OF NORTHEAST

Population 2,110

* No. 336—Farm of 40 acres, located 2 miles from Millerton P. O.; 2 miles from railway station at Millerton, on line of Harlem R. R.; $\frac{1}{2}$ mile from school; 2 miles from churches of all denominations; 2 miles from milk station. Highways, good. Nearest large village, Millerton, population 900, 2 miles distant, reached by highway. Surface of farm, level. Soil, loam. Acres in timber, 5; acres tillable, 35. Fruit, 20 apple trees, 6 pear trees, 3 peach trees, 2 cherry trees, plums, berries, etc. Best adapted to fruit and grain. Fences, good. House, 2 stories, 11 rooms, in good condition. Large barn, 30x55; 18 cattle stalls, in good condition. Watered, house, by well; barn, by spring; fields,

* Farm is in hands of agent or real estate dealer.

by streams and spring. 2 miles from Indian Lake. Occupied by owner. Reason for selling, owner wishes larger farm. Price, \$5,250. Terms, \$2,250 cash, balance on mortgage. Address Herbert Eggleston, agent, Millerton, N. Y.

No. 337—Farm of 180 acres, located $1\frac{1}{4}$ miles from Boston Corner P. O.; R. D. 34, from Millerton; $1\frac{1}{2}$ miles from railway station at Boston Corner, on line of N. Y. & Harlem and C. N. E. R. R.; $\frac{3}{4}$ mile from school; $1\frac{1}{4}$ miles from milk station. Highways, good. Nearest large village, Millerton, population 900, 6 miles distant, reached by rail and highway. Soil, lime soil and gravel loam, high state of cultivation. Acres in meadow, 80; in natural pasture, 60; in timber, 40, chestnut, oak and maple; acres tillable, 140. Fruit, apples, pears, cherries and plums. Best adapted to corn, grass and all kinds of grain. Fences, mostly wire, some wall and rail, good condition. House, 24x40, piazza whole length, $2\frac{1}{2}$ stories, 12 rooms. Outbuildings: barn, 32x66; horse and carriage barn, 30x66 with ell, 12x24; sheds, tenant house and barn. Watered by well, cistern, springs and brook. Occupied by owner and tenant. This farm keeps dairy of 20 to 25; cuts 60 to 75 tons of hay. About 100 miles from New York City. This farm occupies a very desirable location. The house is well shaded by maple and chestnut trees and is situated on high ground overlooking the Harlem Valley. Barns are painted and modern, dairy improvements. A very desirable investment. Reason for selling, advanced age of owner. Price, \$12,500. Address Chas. E. Lloyd, Millerton, N. Y., R. D. 34.

* No. 338—Farm of 157 acres, 1 mile from railway station at Mt. Riga, on line of Harlem R. R.; 1 mile from school; 4 miles from Methodist, Baptist, Catholic and Presbyterian churches; 4 miles from milk station. Highways, good. Nearest village, Millerton, population 900, distant 4 miles; R. D. from Millerton, reached by highway. Surface of farm, level. Soil, loam, productive. Acres in meadow, 148; in timber, 9, chestnut; acres tillable, 148. Fruit, apple orchard, 150 trees, all kinds small fruit. Best adapted to hay and grain. Good fences. House is practically new.

Outbuildings: 2 large barns; new hog-house; poultryhouse; and other buildings; all in good repair. Watered; house, by well; barns, by spring; fields, by springs and stream. Copake Lake and Indian Lake about 5 miles distant. Occupied by owner. Price, \$5,000. Terms, easy. Address Herbert Eggleston, Millerton, N. Y.

* No. 339—Farm of 125 acres, located 1 mile from Millerton P. O., R. D. 34, and railway station, on line of Harlem R. R.; 30 rods from school; 1 mile from churches; 1 mile from butter factory. Highways, good. Nearest village, Millerton, population 900, 1 mile distant, reached by highway. Surface, rolling. Altitude, 800 feet. Soil, limestone loam. Acres in meadow, 100; in natural pasture, 25; in timber, 22, chestnut and oak; acres tillable, 100. 75 apple trees, also plum, pear and cherry trees. Best adapted to fruit and grain. Fences, wire and rail, in good condition. House, 35x45, 3 stories, 18 rooms, in good condition. Dairy barn, 30x60, stable room for 30 head of stock; horse barn; wagon-house; poultryhouse; 3 tenant houses; in good condition. Watered, house, by well; barns and fields, by springs. 1 mile from Rudd Lake. This farm would be very suitable for summer boarders; has a large house and fine shade trees. Occupied by owner. Reason for selling, owner wishes larger farm. Price, \$12,000. Easy terms. Address Herbert Eggleston, Millerton, Dutchess Co., N. Y.

* No. 340—Farm of 180 acres, located $1\frac{1}{4}$ miles from Boston Corners P. O. and railway station, on line of Harlem R. R.; $\frac{1}{2}$ mile from school; 1 mile from churches; $1\frac{1}{2}$ miles from milk station. Highways, good. Nearest village, Boston Corners, population 200, $1\frac{1}{2}$ miles distant, reached by highway. Surface, rolling. Altitude, 700 feet. Soil, limestone, loam. 40 acres of timber, chestnut and oak. 100 apple trees; also pears, peaches, plums, etc. Best adapted to grain and fruit. Fences, rail and wire, in good condition. House, 32x36, 2 stories, ell, 15x20, 2 stories, good condition. Barn, 32x66, stable room for 28 head of stock; horse barn, stable for 6 horses. Watered, house by well and cistern. Occupied by owner. Reason for selling, owner desires to buy a small place in

* Farm is in hands of agent or real estate dealer.

village. Price, \$12,500. Terms, cash preferred. Address Herbert Eggleston, Millerton, Dutchess Co., N. Y.

* No. 341—Farm of 150 acres, located 4 miles from Millerton P. O.; 2 miles from railway station at Coleman's Station, on line of N. Y. C. R. R.; 1 mile from school; 4 miles from churches and milk station and 2 miles from condensing plant. Highways, good. Nearest large village, Millerton, 4 miles distant. Surface, rolling. Soil, slate loam. Acres in meadow, 110; in natural pasture, 15; in timber, 35, chestnut and oak; acres tillable, 110. Fruit, 200 apple trees and plenty of small fruit. Adapted to all kinds of farm produce. Fences, rail and wire. House, 2-story, 8 rooms, in good condition. Out buildings: 3 barns; hoghouse; cornerib, etc.; in good condition. Watered, house by well; barns, by brook; fields, by springs. This property is located 3 miles from Indian Lake. Occupied by owner. Reason for selling, advanced age of owner. Price, \$6,000. Terms, cash. Address Miles L. Jenks, Millerton, N. Y.

* No. 342—Farm of 341 acres, located 4 miles from Millerton P. O.; 1½ miles from railway station at Coleman's and Sharon, on line of Harlem Division of the N. Y. C. R. R.; 1 mile from school and milk station; 4 miles from churches. State road and good country road. Surface of farm, level and rolling. Soil, silt loam. Acres in meadow, 300, in natural pasture, 25; in timber, 15; chestnut and oak; acres tillable, 250. Fruit, 3 acres of apples, also pears and small fruit. Adapted to all crops grown in this climate. Fences, rail and wire, good condition. House, 12 rooms, fine condition. Outbuildings: cow barn; stable for 100 head; horse barn for 10 horses; large hay barn; cornhouse; shed and other outbuildings; good condition. Watered by well, springs and brooks. This farm is well adapted to stock-raising; will carry 100 head of cows and other stock. Very desirable property. Occupied by owner. Reason for selling, to close an estate. For price and terms, address M. L. Jenks, Millerton, N. Y.

* No. 343—Farm of 175 acres, located 2½ miles from Millerton P. O., R. D.; 2½ miles from railway station at Millerton, on line of Harlem Division

of N. Y. C. R. R. and C. N. E. R. R.; 1 mile from school; 2½ miles from Baptist, Methodist, Presbyterian and Catholic churches; 2½ miles from milk station. Highways, good, 1½ miles from State road. Nearest village, Millerton, population 900, 2½ miles distant, reached by highway. Surface of farm, ½ level, ½ hilly. Soil, silt loam. Acres in meadow, 100; in natural pasture, 45; in timber, 30, chestnut and oak; acres tillable, 125. Fruit, 50 apple trees. Adapted to general farming. Fences, rail and wire, in good condition. House, an 8-room house; a small house; both in need of repairs. Barns, large barn, 30x46; smaller barn, 24x32; both in need of repairs. Watered, house, by well; barns, by brook; fields, by springs and brook. This farm is in a good section, and is adapted to dairying. Occupied, farm, by owner; houses, by tenants. Reason for selling, owner has another farm. Price, \$4,500. Terms, \$2,500 cash, balance on mortgage. Address Miles L. Jenks, agent, Millerton, N. Y.

* No. 344—Farm of 10 acres, located 1 mile from Millerton P. O. and railway station, on line of Harlem R. R.; ⅛ of a mile from school; 1 mile from churches of all denominations and milk station. Highways, good. Surface of farm, rolling. Altitude, 800 feet. Soil, limestone loam. Acres tillable, 10. Fruit, several apple trees. Best adapted to fruit and vegetables. Fences, good. House, 7 rooms, good condition. Outbuildings, barn and stable room for 2 cows, 2 horses, wagons, hay, grain, poultry house, in good condition. Watered, house by well; barns by spring. This farm is 1 mile from Rudd Lake. Occupied by owner. Price \$2,500. Terms, ½ cash. Address Herbert Eggleston, agent, Millerton, N. Y.

TOWN OF PINE PLAINS

Population 1,420

* No. 345—Farm of 360 acres, located 2 miles from Pine Plains P. O., R. D. 3; 2 miles from Pine Plains, on line of C. N. E. R. R.; 1 mile from Mt. Ross, on line of Rhinecliff Division of C. N. E. R. R.; 1 mile from school; 2 miles from Baptist, Presbyterian, Catholic and Episcopal churches. Highways, good. Nearest city, Poughkeepsie, population

* Farm is in hands of agent or real estate dealer.

28,000, 25 miles distant, reached by rail or highway. Surface of farm, rolling, some hilly, some level. Soil, loam. Acres in meadow, 40; in natural pasture, 150; in timber, 60, chestnut, oak, hickory; acres tillable, 150. Fruit, 100 apple trees, peaches, pears and other fruit. Best adapted to general farming, has been used as a stock and dairy farm. Fences, rail, wire and stone. Large 12-room house, in good condition. Set of large barns near dwelling, in good condition. Tenant house, barn and shed separate, in fair condition. Watered, house and barn, by running water; fields, by springs and brooks. Occupied by owner. Reason for selling, owner is a widow. Price \$40 an acre. Terms, $\frac{1}{2}$ cash. Address Miles L. Jenks, agent, Millerton, N. Y.

* No. 346—Farm of 360 acres, located 1 mile from Mt. Ross P. O.; R. D. 37 from Pine Plains; on line of C. N. E. R. R.; 1 mile from station; 1 mile from school; 2 miles from Reformed church. Highways, good. Nearest village, Pine Plains, population 600, 3 miles distant, reached by highway. Occupied by owner. Surface of farm, rolling. Soil, gravelly loam. Acres in meadow, 150; in natural pasture, 150; in timber, 60, oak, hickory and chestnut; acres tillable, 250. Fruit, 200 apple trees, pears and cherries. Best adapted to hay, grain, potatoes and fruit. Fences, stone wall, rail and wire. House, 12 rooms, in fine condition. Main barn, 40x60; wagonhouse, 50x30; storage barns. Watered, house and barn, by running spring water; fields, by springs and streams. A good dairy and chicken farm. Reason for selling, owner a widow. Price, \$11,000. Terms, \$6,000 cash, balance on mortgage. Address John P. Fulton, agent, Red Hook, N. Y.

TOWN OF PLEASANT VALLEY

Population 1,358

No. 347—Farm of 97 acres, situated near C. N. E. R. R.; R. D. from Pleasant Valley. Highways, good. Soil, good flat land. Acres of meadow, nearly all tillable. Fruit, large, young apple orchard. Best adapted to hay, oats, barley, potatoes, corn, buckwheat, etc. Occupied by owner. Fences, stone, and in good condition. Large house, comparatively new. Barns large and good, running

water. Watered, house, by well and cistern; fields, by small stream. It is said that the buildings on this farm could not be replaced for \$12,000. Reason for selling, advanced age of owner. Price, about \$14,000. Terms on application. Name and address of owner, Ralph Bartholomew, Pleasant Valley, N. Y., R. D.

No. 348—Farm of 83 acres, located $1\frac{3}{4}$ miles from Salt Point P. O., R. D. 54; 2 miles from railway station at Salt Point, on line of C. N. E. R. R.; 1 mile from school and churches; 2 miles from butter factory and milk station. Highways, good. Nearest city, Poughkeepsie, population about 28,000, distant 9 miles, reached by rail and highway. Surface level and rolling. Altitude, about 400 feet. Soil, Dutchess silt loam. Acres in natural pasture, 5; in timber, $\frac{1}{4}$; acres tillable, 82. Fruit, cherries, pears, apples. Best adapted to corn, rye, oats, timothy, potatoes and apples. Fences, stone and wire, good condition. House, 14 rooms, large, excellent condition. Outbuildings: new barn, 28x32; granary; carriagehouse, 16x24; henhouse and woodshed, 11x40; chickenhouse, 8x20. Watered, house, by cistern and well; barns and fields, by springs. This farm will keep 15 cows. Occupied by owner. Reason for selling, owner going West. Price, \$5,000. Terms, \$3,000 cash, balance can remain on mortgage at 5% interest for four years. Address August L. Warnken, Salt Point, N. Y., Box 54.

TOWN OF RED HOOK

Population 3,705

No. 349—Farm of 145 acres, 100 rods from Spring Lake station; $1\frac{1}{2}$ miles from Upper Red Hook P. O. Good road. Soil, loam, muck, and gravel, very rich. 100 acres meadow; natural pasture, 25; timber, 20. Large house, in fine condition, suitable for boarders. Soil adapted to gardening, dairying and grain. Barns, large and good, with stable room for 25 cows. Fruit, pear orchard and 400 apple trees. Watered by springs and lake adjoining farm. This is a fine farm for raising poultry. Price, \$13,000. Terms, to suit the purchaser. Name and address of owner, Milton Best, Red Hook, N. Y.

* Farm is in hands of agent or real estate dealer.

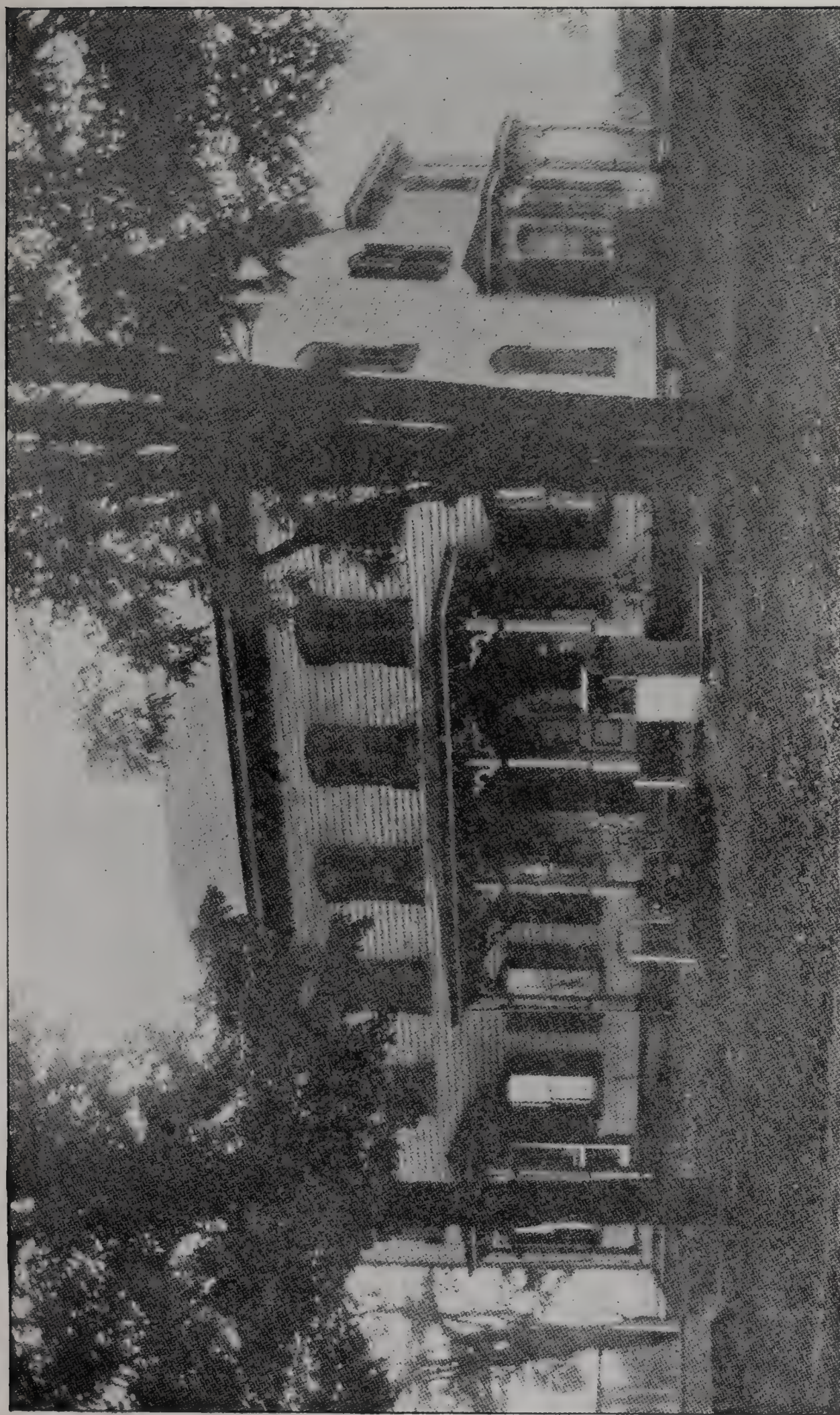


FIG. 11.— HOUSE ON FARM 348, TOWN OF PLEASANT VALLEY, DUTCHESS COUNTY.

No. 350—Farm of 108 acres; 1 mile from post office; 1 mile from 3 churches; ½ mile from the Baker Chocolate factory creamery and high school. First-class frame house. Barn, 40x52, with basement. Good outbuildings. Two violet houses, one 155 feet long, just built at a cost of \$1,800. Ready market found for all that can be raised on the farm and in the conservatory. Would be a good place to breed and train horses, as there is a new half-mile track a quarter mile from the house, and entrance to track is only across the State road from entrance to farm. Reason for selling, owner cannot stand hard work and is obliged to change his occupation. Price and terms confidential. Address Julius Moul, Red Hook, N. Y.

* No. 351—Farm of 51 acres, located 1½ miles from Red Hook P. O.; 2 miles from railway station at Red Hook, on line of C. N. E. Ry., and 4 miles from railway station at Barrytown, on line of H. R. & N. Y. C. R. R.; 1½ miles from school, Catholic and Protestant churches; 2 miles from milk station. Highways, macadamized. Surface of farm, nearly level. Altitude, about 200 feet. Soil, a fine sandy loam. Acres in meadow, 20; in natural pasture, 15; in timber, 4, oak, elm, chestnut, etc. Acres tillable, 46. Fruit, 200 apple trees, pears, cherries and grapes. Best adapted to fruit, corn, potatoes, wheat and poultry. Fences, mostly wire, fair condition. House, 30x40, 2 stories, good condition. Outbuildings, barn, 36x50, wagon house, 24x36 and shed, all in good condition. Watered by wells and springs. This farm is about 2 miles from Hudson River. Occupied by owner. Reason for selling, owner a widow and cannot attend to property. Price, \$7,300. Terms, \$3,300 cash, balance on mortgage at 5%. Address H. D. Ostrom, agent, Rhinebeck, N. Y.

* No. 352—Farm of 123 acres, located 4 miles from Red Hook P. O. and railway station, on line of C. N. E. R. R.; 6 miles from railway station at Barrytown, on line of N. Y. C. & H. R. R. R.; 2 miles from school; 4 miles from Methodist church and milk station; 6 miles from Episcopal and Catholic churches. Highways, somewhat hilly but good. Surface of farm hilly. Altitude, about 300 feet. Soil, slate loam.

Acres in meadow, 20; in natural pasture, 40; in timber, 20, oak, elm, chestnut and hickory. Acres tillable, 100. Fruit, 125 full bearing apples, also pears, grapes and cherries. Best adapted to corn, potatoes, oats, grass, rye and fruit. Fences, mostly stone wall, fair condition. House, 24x40, 1½ stories, old style but in good repair. Outbuildings: barn, 40x50; shed, 30x40, and wagon house, 24x36, all in fair condition. Watered, house and barn, by well; fields, by springs and brook. Occupied by owner. Reason for selling, advanced age of owner. Price, \$4,500. Terms, ½ cash. Address H. D. Ostrom, agent, Rhinebeck, N. Y.

* No. 353—Farm of 110 acres, located 1 mile from Upper Red Hook P. O., R. D. 44; ½ mile from railway station at Upper Red Hook, on line of C. N. E. Ry.; 1 mile from school and church. Highways, good. Occupied by owner. Surface of farm, rolling. Soil, gravelly loam. Acres in meadow, 10; in natural pasture, 100. Acres tillable, 15. Fruit, 400 apple trees and 50 pear trees. Best adapted to grain, fruit and hay. Fences, stone wall and wire, good condition. House, 38x28, with addition 16x28, good condition. Outbuildings, barn, 52x40, shed adjoining, 21x32, basement under all, new. Watered, house, by well and cistern; barn, by wells; fields, by springs. Spring Lake is ½ mile from farm. Price, \$11,000. Terms, cash. Reason for selling, advanced age of owner. Address John P. Fulton, agent, Red Hook, N. Y.

TOWN OF RHINEBECK

Population 3,532

* No. 354—Farm of 260 acres, located 3 miles from Rhinebeck P. O., R. D. 48; 6 miles from railway station at Rhinecliff, on line of N. Y. C. & H. R. R. R.; ½ mile from schools; 3 miles from Catholic, Methodist and Reformed churches. Highways, mostly macadamized. Surface of farm, level and slightly rolling except 50 acres which is hilly. Altitude, about 300 feet. Soil, mostly a gravelly loam. Acres in meadow, 65; in natural pasture, 70; in timber, 20. Acres tillable, 230. Fruit, about 150 apple trees. Best adapted to corn, wheat, rye, potatoes, grass and fruit. Fences, some stone wall and some wire. House, 2 stories,

* Farm is in hands of agent or real estate dealer.

14 rooms, bath, hot and cold water, good condition. Outbuildings, large, plenty of them and in good condition. A lake $\frac{1}{2}$ mile long adjoins farm. Watered, house, by well; barns, by well and brook; fields, by brook, spring and lake. Occupied by owner. Reason for selling, advanced age of owner. Price, \$11,000. Terms, \$5,000 cash. Address H. D. Ostrom, agent, Rhinebeck, N. Y.

No. 355—Farm of 138 acres, located $\frac{1}{4}$ mile from Rhinebeck P. O.; $1\frac{1}{2}$ miles from Rhinecliff railway station, on line of N. Y. C. R. R.; $\frac{1}{4}$ mile from school and churches; 6 miles from milk station. Highways, good. Surface, mostly level. Soil, loam. Acres in meadow, all; acres tillable, all. Fruit, 300 apple trees, some pears and cherries. Best adapted to hay, corn, wheat, potatoes and rye. Fences, wire, fair. House, 40x80, good. Outbuildings: barn, 150x35; carriagehouse, 40x60; stable, 40x20; 3 greenhouses for violets. Income from violets, \$5,000. Watered by village water, spring and creek. This property is $1\frac{1}{2}$ miles from Hudson River, good view of Catskill Mountains. This would make an ideal place for large summer hotel, school or sanitarium, as it is high and

gets the breezes from the Catskills. The village needs a good hotel for summer boarders. Occupied by owner. Price, \$35,000. Terms, $\frac{1}{2}$ cash, remainder on mortgage. Address Francis Curnan, Rhinebeck, N. Y.

* No. 356—Farm of 100 acres, located 4 miles from Rhinebeck P. O.; 7 miles from railway station at Rhinecliff, on line of N. Y. C. R. R.; 1 mile from school; 4 miles from Catholic and Protestant churches; 5 miles from butter factory; 4 miles from milk station. Highways, somewhat hilly, but good. Surface of farm, rolling. Altitude, about 350 feet. Soil, loam. Acres in meadow, 30; in natural pasture, 30; in timber, 20, mostly oak and chestnut. Acres tillable, 80. Fruit, about 50 apple trees, also cherries, plums and pears. Best adapted to fruit, grazing and poultry. Fences, stone wall and wire, fair condition. House, 8 rooms, 2 stories, good condition. Outbuildings, barns and sheds will need some repairs. Watered by well, brook and spring. Occupied by owner. Reason for selling, poor health of owner. Price, \$2,500. Terms, \$1,500 cash. Address Henry D. Ostrom, agent, Rhinebeck, N. Y.

ERIE COUNTY

Area, 1,171 square miles. Population, 528,985. Annual precipitation, 33.51 inches. Annual mean temperature, 49.7°. Number of farms, 8,178. County seat, Buffalo.

This county lies at the west end of the state on Lake Erie and Niagara River and is one of the larger counties both in area and population.

Its surface is level in the north, rolling in the center and hilly in the south. A region of level country of considerable extent lies along the Tonawanda creek and occupies the greater part of the northern tier of towns. The soil of the northern part of the county is generally a clay loam interspersed with beds of marl and muck, further south is found a clay gravelly loam resting upon limestone, and the southern hills are covered with drift consisting of clay and gravel. The soil of the valleys is generally of gravelly loam and alluvium. The principal pursuits are grain raising and dairying, the southern hill regions being well adapted to grazing and stock raising. It is also a strong fruit county and ranks high in the production of orchard and vineyard products. Buffalo, a city of 423,000 population, affords an unlimited market close at hand. From this city, the western terminal of the barge canal, reaching from the Hudson river to Lake Erie, an enormous commercial business is carried on by way of the lake to the towns along its shore.

The principal crops are as follows: Corn, 588,563 bushels; oats, 1,384,876 bushels; wheat, 355,870 bushels; buckwheat, 169,673 bushels; potatoes, 3,014,450 bushels; hay and forage, 207,202 tons. The value of all farm property is \$63,808,399, an increase of 23.7 per cent. The average price per acre of farm land, including buildings, is \$95.40. Much of the land is of high valuation because of its adaptability to truck gardening and the splendid orchards of apples, pears, peaches, plums, etc. Aside from these products there were produced 24,470,712 gallons of milk, the receipts from the sale of dairy products being \$2,323,714. There are 259 district schools and these schools and the many high schools of the county are all up to the high standard re-

* Farm is in hands of agent or real estate dealer.

quired by the state. Churches of all denominations are scattered throughout the rural sections. The county has nineteen agricultural organizations for the purpose of conserving some one or more interests in agriculture. Thirty-six dairy stations and factories meet the demand of the farmers for milk market. There are 163 miles of state and county roads and 1,680 miles of other improved highways in the county.

TOWN OF AURORA

Population 4,479

* No. 357—Farm of 65 acres, located $2\frac{1}{2}$ miles from Willink P. O., R. D. 1; 3 miles from railway station at East Aurora, on line of the Penn. R. R.; 60 rods from school; 3 miles from churches; $3\frac{1}{2}$ miles from butter and cheese factories. Highways, good country roads. Nearest village, East Aurora, population, 3,000, 3 miles distant, reached by rail or highway. Surface, rolling. Soil, loam. Nearly entire farm tillable. Some apple trees. Best adapted to grass, potatoes and grain. Fences, wire, good condition. House, good condition, worth \$2,500. Large, good barns. Watered, house and barns, by well; fields, by brook. Occupied by owner. Reason for selling, owner would go West. Price, \$75 per acre. Easy terms. Address W. D. Jones, agent, East Aurora, Erie Co., N. Y.

* No. 358—Farm of 86 acres, located $1\frac{1}{2}$ miles from Willink P. O., R. D. 1; $2\frac{1}{2}$ miles from railway station at East Aurora, on line of Penn. R. R.; $\frac{1}{4}$ mile from school; 3 miles from churches; 3 miles from butter factory. Highways, good farm roads. Nearest village, East Aurora, population 3,000, 3 miles distant, reached by highway. Buffalo, 18 miles distant. Surface, slightly rolling. Soil, good loam. Entire farm tillable. Some apple trees. Best adapted to grass, potatoes and grain. Fences, wire, in good condition. Good house, worth \$2,500. Large barns, worth \$1,500. Watered, house and barns, by well. Occupied by owner. Reason for selling, owner wishes to go West. Price, \$75 per acre. Easy terms. Address W. D. Jones, agent, East Aurora, Erie Co., N. Y.

* No. 359—Farm of 118 acres, located $1\frac{1}{2}$ miles from East Aurora P. O., R. D. 1, and railway station, on line of the Penn. R. R.; 1 mile from school; $1\frac{1}{2}$ miles from churches, butter factory and cheese factory. Highways, good. Near-

est village, East Aurora, population 3,000, $1\frac{1}{2}$ miles distant. Buffalo, 18 miles distant, reached by rail or highway. Surface, slightly rolling. Soil, mostly gravelly loam. Nearly entire farm tillable. Best adapted to hay, grain, potatoes and corn. Fences, wire, good condition. Good house, worth \$3,500 to \$4,000. Good, large barns. Watered, house and barn, by well; fields, by brook. Occupied by tenant. Reason for selling, owner a retired farmer. Price, \$75 per acre. Terms easy. Address W. D. Jones, agent, East Aurora, N. Y.

TOWN OF BOSTON

Population 1,535

* No. 360—Farm of 100 acres, located $3\frac{1}{2}$ miles from Hamburg P. O.; 2 miles from railway station at North Boston, on line of B. & S. R. R.; 1 mile from school and churches; 2 miles from butter factory and milk station. Highways, good. Nearest large village, Hamburg, population 2,500, reached by highway. Surface, rolling and level. Soil, yellow loam. Acres in meadow, 25; in natural pasture, 25; in timber, 25, hemlock and maple; acres tillable, 60 to 75. Fruit, apples, pears and cherries. Fences, wire and wood. House, large, 10 rooms, 2 stories, brick. Outbuildings, in fair condition. Watered, by well and spring. Occupied by owner. Reason for selling, owner does not care for so large a farm. Price, \$7,000. Terms, $\frac{1}{2}$ cash, balance on mortgage at 6%. Address Jacob Hauck & Son, agents, Hamburg, N. Y.

TOWN OF CLARENCE

Population 2,991

No. 361—Farm of 60 acres, located $\frac{3}{4}$ mile from Clarence P. O., R. D. 1, and station of Clarence, on line of W. S. R. R.; $\frac{3}{4}$ mile from high school, Protestant churches, butter factory and milk station. Roads are macadamized. Nearest city, Buffalo, distant 18 miles by rail or good roads. Surface, level. Soil, clay and gravelly loam. 58 acres

* Farm is in hands of agent or real estate dealer.

tillable; 2 acres timber, second growth, hard wood. Has 125 apple, 35 pear, 24 plum, 6 cherry, 2 quince trees, all of good varieties, good grapevines, etc. Land is adapted to general farm crops, and especially for dairying. Fences, wire, in good condition. 10-room house, with cellar, all in good condition. Barn, 35x60; 2 silos; hogpen, 18x30; toolhouse; 2 chickenhouses; cornercrib; woodshed and shop, 20x45; stone smokehouse. Barn contains a horse stable with 4 stalls and a cemented cow stable for 10 head of cattle, barn in good condition. House has water from dug wells; barns the same, water piped direct to cow stable from outside. Occupied by tenant. Reason for selling, owner has retired. Price, \$5,000. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address J. G. Helwig, Clarence, N. Y.

TOWN OF COLDEN

Population 1,303

No. 362—Farm of 23 acres, $\frac{1}{8}$ mile from Colden P. O.; $\frac{1}{4}$ mile from railway station at Colden, on B., R. & P. R. R.; $\frac{1}{4}$ mile from school; $\frac{1}{8}$ mile from Methodist church and butter factory; 5 minutes' walk to Catholic church. New State road running to Buffalo, passes farm. Nearest city, Buffalo, population about 400,000, 20 miles distant, reached by rail and highway. General feature of farm, mostly level. Soil, loam. Acres in meadow, about 16; pasture, about 6; acres tillable, 19. Fruit, 25 apple trees, few pears. Best adapted to corn, potatoes, oats, buckwheat and grass. Fences, wire. House, one part, 16x30, addition 29x30. 2 stories. 2 barns joined together, one 26x30, the other 30x29, painted and in good condition. Occupied by owner. Watered, house and barn, by pump; fields, by running water. Lake Erie 20 miles away. This farm has one of the most beautiful locations in the vicinity and would make a good summer home. Reason for selling, owner has other business. Price, \$5,000. Terms, \$1,500 cash, balance on mortgage on reasonable terms. Address Orlin J. Colburn, Colden, N. Y.

TOWN OF HAMBURG

Population 6,059

* No. 363—Farm of 90 acres, $1\frac{1}{2}$ miles from Hamburg P. O.; 2 miles from railway station at Hamburg, on line of Erie

and B. & S. R. R., and from school, churches and milk station; $\frac{1}{4}$ mile from cheese factory. Highways, State road, improved macadam. Nearest village, Hamburg, population about 2,500, distant $1\frac{1}{2}$ miles, reached by highway. Surface of farm, slightly rolling. Soil, gravel and sandy loam. Acres in pasture, 12; acres tillable, all. Fruit, about 50 apple trees, a few plum and pear trees. Best adapted to gardening and potatoes. Fence around pasture. Good house, 28x40, with wing. Large ample barns. Watered by wells. $\frac{1}{2}$ mile from Eighteen Mile Creek. Occupied by owner. Reason for selling, owner wishes to live near his relatives. Price, \$100 per acre. Terms, $\frac{1}{2}$ cash, balance 6% mortgage. Address Jacob Hauck, agent, Hamburg, N. Y.

* 364—Farm of 128 acres, located $1\frac{1}{2}$ miles from Hamburg P. O., 2 miles from railway station at Hamburg, on line of Erie and B. & S. R. R.; $1\frac{1}{2}$ miles from school and churches; 2 miles from butter factory, cheese factory and milk station. Highways, good. Surface of farm, level and rolling. Soil, yellow loam. Acres in meadow, 25; in natural pasture, 28; in timber, 3. Acres tillable, 75. Fruit, a few apples, pears and plums. House, 6 rooms, fair condition. Outbuildings, large barn, poor condition. Watered by well. This farm is 6 miles from Lake Erie. Occupied by tenant. Reason for selling, to close an estate. Price, \$9,000. Terms, \$1,000 down, balance on easy terms. Address Jacob Hauck & Son, agents, Hamburg, N. Y. Owner will rent.

* No. 365—Farm of 45 acres, located 4 miles from Hamburg P. O.; 1 mile from railway station at Weyer, on line of N. Y. C. and Penn. R. R.; $1\frac{1}{2}$ miles from school; 4 miles from churches. Highways, good. Surface of farm, level. Soil, gravelly and yellow loam. Acres in meadow, 5; in natural pasture, 3. Acres tillable, 40. Fruit, a few apples, pears and plums. House, 6 rooms, fair condition. Outbuildings, 2 large barns, good condition. Watered by well. Occupied by tenant. Reason for selling, owner a widow and cannot attend to farm. Price, \$4,000. Terms, \$1,500 down, balance on easy terms. Address Jacob Hauck & Son, agents, Hamburg, N. Y.

* Farm is in hands of agent or real estate dealer.

TOWN OF HOLLAND

Population 1,468

* No. 366—Farm of 67 acres, located $1\frac{1}{2}$ miles from Holland P. O.; two miles from railway station at Holland, on line of Penn. R. R.; $\frac{1}{4}$ mile from school, $1\frac{1}{2}$ miles from churches and butter factory; 2 miles from milk station; 10 miles from milk condensing plant. Highways, nearly level. Surface of farm, rolling. Soil, gravelly loam. Acres in meadows, 20; in natural pasture, 30; in timber, 6; maple and beach, second growth. Acres tillable, 40. Fruit, a few apples, cherries and pears, enough for family use. Best adapted to corn, oats and potatoes. Fences, wire, good condition. House, 9 rooms, $1\frac{1}{2}$ stories, with wing and good cellar. Outbuildings, barn, 40x50, old style, fair condition. Watered, house and barns by well; fields by springs. Occupied by tenant. Reason for selling, owner has other business. Price, \$3,300. Terms, $\frac{1}{2}$ cash, balance on mortgage at 5%. Address John Bolender, agent, Holland, N. Y.

* No. 367—Farm of 156 acres, located 1 mile from Protection P. O. and railway station, on line of Penn. R. R.; $\frac{1}{2}$ mile from school, churches, butter factory and cheese factory; 1 mile from milk station; 7 miles from milk condensing plant. Nearest large village, Holland, $2\frac{1}{2}$ miles distant, reached by highway. Surface of farm, rolling. Soil, gravelly and clay loam. Acres in meadow, 35; in natural pasture, 60; in timber, second growth, mostly beach. Acres tillable, 75. Fruit, apples, pears, plums and grapes, for family use. Best adapted to grain, potatoes, oats and buckwheat. Fences,

mostly wire, good condition. House, 1 story, 25x40, 12 rooms. Outbuildings, 2 barns, horse barn, 30x40, cow barn, 40x50, new concrete basement. Watered, house and barn by gravity system; fields by brook. Occupied by owner. Reason for selling, ill health of owner. Price, \$30 per acre. Terms, $\frac{1}{2}$ cash, balance on time. Address John Bolender, agent, Holland, N. Y.

TOWN OF WEST SENECA

Population 4,605

No. 368—Farm of 65 acres, located $\frac{1}{2}$ mile from Ebenezer P. O., R. D. 2; $1\frac{1}{2}$ miles from railway station at Ebenezer, on line of Penn. R. R.; $\frac{3}{4}$ mile from school and from Lutheran and Methodist churches; $1\frac{1}{2}$ miles from milk station. Macadam roads, good. Nearest city, Buffalo, population 400,000, 2 miles distant, reached by rail or highway. Surface of farm, slightly rolling. Soil, gravel and sandy loam. Acres in meadow, 40; in natural pasture, 5; acres tillable, 55. Fruit, 150 apple, 15 pear, 50 cherry, 6 prune, 2 quince and 5 crab-apple trees. Best adapted to corn, wheat, oats, potatoes, onions and cabbage. Fences, part barbed wire. New house, 7 rooms; old house, 8 rooms. Barns: 40x70; 40x60; both in good condition. Watered, house and barn, by well. 4 miles from Lake Erie. Gas well on property; also gas in both houses and water and bath in new house. Occupied by owner and tenant. Reason for selling, owner wishes to retire. Price \$30,000. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address Wm. Eckert, Ebenezer, N. Y.

ESSEX COUNTY

Area 1,926 square miles. Population, 33,458. Annual precipitation, 35.41 inches. Annual mean temperature, 46.8°. Number of farms, 2,274. County seat, Elizabethtown.

This county is located in the northeastern part of the state.

It is by far the most broken and mountainous section of the state, with the exception of a strip of land lying along the shore of Lake Champlain. Nearly the whole county is of an Alpine character. Among these mountains are immense beds of magnetic iron ore. Other minerals interesting to science are found in abundance. Lake Champlain and Lake George lie partly in the county. These lakes with the Champlain Canal, the Hudson, Saranac and Raquette Rivers form a convenient outlet for the large amount of logs, lumber and mineral products of the county. There is also an outlet for everything marketable on the north by the way of the Richelieu and St. Lawrence Rivers.

* Farm is in hands of agent or real estate dealer.

Only about one-third of the area of the county is in farms and only about one-eighth improved farms, yet there is a remarkably good report of agricultural production, showing that the tillable land must be very productive. The average price of improved farm lands including buildings is \$24.71 per acre. The leading crops of the county are corn, 96,383 bushels; oats, 222,971 bushels; barley, 9,395 bushels; buckwheat, 25,197 bushels; potatoes, 269,319 bushels; hay and forage, 50,479 tons. The number of domestic animals reported on 2,139 farms are dairy cows, 10,634; horses, 5,907; swine, 4,949; sheep, 19,814; poultry, 61,169. The product of milk was 4,976,712 gallons, the total receipts for the sale of dairy products, \$303,933. There are 164 district schools and the same favorable condition exists in regard to churches of all denominations. There are 14 agricultural organizations in the county all interested in the promotion of agricultural matters. The county has 100 miles of state and county roads and 1,069 miles of other improved highways. A smaller per cent. of the farms of Essex County are mortgaged than in any other county of the state.

TOWN OF CHESTERFIELD

Population 1,829

No. 369—Farm of 116 acres, located 1 mile from Keeseville. Soil good. 60 acres meadow; 40 pasture; 20 timber. Watered by brook and well. Wire fences. Barns, 30x40, 30x60, 30x60, 50x20 and shed 36x12, 5 sheds, 13x30, and 1 shed 13x60. House, 1½ stories, 22x26. Price, \$6,000. Name and address of owner, Henry M. Prime, Keeseville, N. Y.

No. 370—Farm of 400 acres, 4 miles from Keeseville P. O.; 1½ miles from Douglas railway station. Soil, gravelly. Acres in meadow, 80; pasture, 260; timber, 60. House, 24x32, 2 stories high, with addition, 15x30, 1½ stories; new barn, 100x40, with basement and new silo; 2 barns, 26x36 each; wagonshed, 26x33; all in good condition. Watered by well, cistern and windmill. Fences, mostly wire, in good condition. The farm is on the west shore of Lake Champlain in its broadest part and opposite Burlington, Vt. The buildings are about 400 feet above the lake with full view for many miles in either direction, 40 rods bordering on Lake Champlain. Price includes heavy working team, harnesses, carriages, complete set of farming utensils and machinery. Price, \$15,000. Terms, ½ down, balance on mortgage. Address Carlos W. Rowe, Keeseville, N. Y.

TOWN OF MORIAH

Population 6,754

No. 371—Farm of 106½ acres, 4 miles from Port Henry and Moriah. Soil, black and yellow loam. About 40 acres in timber; balance, meadow and pasture land. Fruit, 500 apple trees. House, 26x24. Barn, 30x40, with stables

and other outbuildings. Watered by well. This farm is situated at the terminus of Kayaderosseras range, 2 miles west of Fort Frederick, and about 1,000 feet above it. It commands a view of the barge canal for about 40 miles; also of the Adirondack and Green Mountains; a desirable location for a country residence. Price, \$2,000. Address C. A. Butler, Moriah, N. Y.

TOWN OF ST. ARMAND

Population 746

No. 372—Farm of 184 acres, located 1 mile from Bloomingdale P. O.; 3 miles from railway station at Bloomingdale, on line of D. & H. R. R.; 1 mile from school and churches. Highways, State road. Nearest large village, Saranac, 5 miles distant, population about 6,000, reached by highway. Surface of farm, rolling and hilly. Altitude, about 1,600 feet. Soil, dark loam. Acres in meadow, 15; in natural pasture, 100; in timber, 50, second growth. Acres tillable, 60. Best adapted to hay, oats, potatoes and vegetables. Fences, wire and rail, good condition. House, 20x20, rather old but in good repair. Outbuildings, 3 barns and 2 sheds, good condition. Watered, house and barns by running water. Occupied by owner. Reason for selling, ill health and advanced age. Price, \$6,000. Terms, ½ down, balance on time. Address C. W. Walton, Bloomingdale, N. Y.

TOWN OF SCHROON

Population 1,013

No. 373—Farm of 50 acres, located in the Adirondacks, on daily stage route; 5 minutes' walk from Paradox Lake, a noted summer resort. Good prices and an excellent summer market for farm

products. Good highway, partly macadamized. $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from Schroon Village, another noted summer resort and trading place, where churches of several denominations are located. Farm, all tillable, nearly level, without stone, sandy loam. Good fences. Good buildings, almost new. House has 11 sleeping rooms,

suitable for summer guests, cost \$4,000, running spring water. Best adapted to corn, oats, potatoes, strawberries and all kinds of vegetables. Reason for selling, owner has other business. Good place for hunting and fishing. For complete information as to price, terms, etc., address John R. Laymond, Lethbridge, Alberta, Canada.

FRANKLIN COUNTY.

Area, 1,718 square miles. Population, 45,717. Annual precipitation, 37.16 inches. Annual mean temperature, 43.3° . Number of farms, 3,675. County seat, Malone.

This county ranks fourth in the land area, and is situated on the north line of the state bordering on Canada.

Its surface is mostly level in the northern part, undulating and rolling in the center and broken and mountainous in the eastern portion. There are many streams in the northern part of the county affording abundance of water for the farming section and in the southern and mountainous portion of the county is a large number of lakes, some of them several miles in extent. Dairying is carried on to a large extent in the northern part. There is a large amount of timber in the central and southern portion. The farm valuation is placed at \$17,571.27, a gain of 37.5 per cent. over that of 1900. The average price per acre of improved farm land including buildings is \$32.50. The principal crops raised were corn, 144,646 bushels; oats, 756,302 bushels; wheat, 10,142 bushels; barely, 62,709 bushels; potatoes, 1,433,761 bushels; hay and forage, 107,630 tons. The county ranks high in the production of barley and potatoes. The number of domestic animals reported are as follows: Dairy cows, 28,964; horse, 9,262; swine, 12,893; sheep, 5,233; poultry, 98,495; milk production, 12,715,196 gallons and total receipts from dairy products, \$1,135,644. There are 99 district schools, many churches of all denominations and 14 agricultural organizations, one dairymen's association, one agricultural society and one county fair association. This county has 40 dairy stations and factories. The hardier kinds of apples are grown in abundance and the fruits are easily cultivated. There are ample facilities for marketing. The St. Regis Indians have a reservation of 24,000 acres in the northwest corner of the county.

TOWN OF ALTAMONT

Population 4,691

No. 374—Farm of 150 acres, located 1 mile from Tupper Lake P. O.; $\frac{1}{3}$ mile from railway station at Tupper Lake Junction, on line of N. Y. & O. and N. Y. C. & H. R. R. R.; $1\frac{1}{4}$ miles from school; 1 mile from Catholic, Methodist and Presbyterian churches and Jewish synagogue. Highways, good stone road. Nearest village, Tupper Lake, population 3,000, 1 mile distant, reached by highway. Surface of farm, rolling and level. Altitude, 1,650 feet. Soil, dark loam and good. Acres in meadow, 60; in natural pasture, 75; in timber, 15, mostly maple and birch; acres tillable, 140. Fruit, 8 apple trees. Best adapted to all kinds of truck gardening, hay and oats. Fences, wire, in good condition. House, 32x32, 2 stories, in first-class condition. 3 barns, 2, 30x50, and 1, 33x60, all in first-class condition. Watered, house, barn and

fields, by well. $\frac{3}{4}$ mile from Racquette River, 4 miles from Big Tupper Lake. This piece of property is on main road from Tupper Lake Village to Malone, and is an ideal place for a sanatorium or a summer home. If farming is preferred, all milk produced can be sold at 5 to 8 cents per quart. Occupied by owner. Reason for selling, owner wishes to retire from business. Price, \$18,000. Terms, at least $\frac{1}{2}$ cash. Owner will rent. Address Norwood Mfg. Co., Tupper Lake, N. Y.

No. 375—Farm of 5 acres, located $1\frac{1}{4}$ miles from Tupper Lake P. O.; $1\frac{1}{4}$ miles from railway station at Tupper Lake, on line of N. Y. & O. R. R.; $1\frac{1}{4}$ miles from school, Methodist, Episcopal and Catholic churches. Highways, macadamized, good. Nearest village, Tupper Lake, population 3,000, $1\frac{1}{4}$ miles distant, reached by highway. Surface of farm, rolling. Altitude, 1,600 feet.

Soil, rich. Acres tillable, 5. Fruit, 9 apple trees, 200 gooseberry and currant bushes, 1 acre of strawberries. Adapted to all kinds of truck gardening. Fences, wire. House, 7-room bungalow, 26x38, fine cellar. Small barn, hen house, 12x36, and cowshed. Watered, house, by well. 100 rods to Raquette River, 3 miles to Tupper Lake. Surrounded by mountains. House is 7 years old, in fine condition; piazza, 10x30; good fishing and deer hunting near. Occupied by owner. Reason for selling, advanced age of owner. Price, \$4,500. Terms, cash preferred but will sell for $\frac{1}{2}$ cash, balance on bond and mortgage. Address C. C. Miller, Tupper Lake, N. Y.

TOWN OF BRANDON

Population 872

No. 376—Farm of 152 acres, located 2 miles from Skerry P. O., R. D. 4; 8 miles from railway station at Bangor, on line of Rutland R. R.; 2 miles from school, Congregational church and butter factory; 8 miles from condensing plant. Highways, hilly. Nearest city or large village, Malone, population 7,000, 10 miles distant, reached by highway. Surface of farm, rough. Altitude, 1,100 feet. Soil, loam. Acres in meadow, 60; in natural pasture, 65; in timber, 27, mostly sugar maple; acres tillable, 30. Fruit, 40 apple trees. Adapted to general farm crops. There is a good sugar bush of 1,000 trees on the farm; also other wood. Fences, wire and rail, in fair condition. House, 1, 26x36; 1, 24x30; in fair condition. Barns, 30x40 and 40x26; granary, 26x36; hogpen, 18x20; henhouse, 14x16. Watered, house and barns, by well; fields, by springs. Occupied by owner. Reason for selling, owner wishes to live elsewhere. Price, \$1,600. Terms, part cash. Address W. C. Thomas, North Bangor, N. Y., R. D. 4.

No. 377—Farm of 45 acres, located $1\frac{1}{2}$ miles from P. O., R. D. 4; 6 miles from railway station at Bangor, on line of Rutland R. R.; $\frac{1}{2}$ mile from school; 2 miles from Congregational, Methodist and Catholic churches; 2 miles from butter factory; 3 miles from cheese factory; 6 miles from condensing plant. Highways, good. Nearest large village, Malone, population 7,000, 9 miles distant, reached by highway. Surface of farm, level. Soil, loam. Acres in meadow, 25; in natural pasture, 10; in timber, 10, sugar maples; acres till-

able, 25. Fruit, 25 apple trees. Adapted to all farm crops. Fences, rail, stone wall and wire. House, main, 25x30, with kitchen, about 20x30, in good condition. 2 barns, about 30x40, hogpen, granary and sheds. Watered, house, by well and cistern; barns, by well; fields, by spring. House, in first-class condition, has always been occupied by owner. Reason for selling, owner has other business. Price, \$2,500. Terms, \$1,000 cash, balance on easy terms. Address Herbert Washburn, Ogdensburg State Hospital, N. Y.

TOWN OF BRIGHTON

Population 741

No. 378—Farm of 430 acres, located 3 miles from Bloomingdale P. O., and $1\frac{1}{2}$ miles from Gabriels P. O.; $1\frac{1}{2}$ miles from railway station at Gabriels and Bloomingdale, on line of N. Y. C. and D. & H. R. R.; 1 mile from school and church. Nearest large village, Saranac Lake, population 5,000, 7 miles distant, reached by rail and highway. Surface, mostly level. Altitude, about 1,700 feet. Soil, sandy loam. Acres in meadow, 230; in natural pasture, 100; in timber, 100, beech, birch, maple, spruce, balsam and larch; acres tillable, 300. Best adapted to potatoes, oats and hay. Fences, poor. House, 2-story, good condition. Outbuildings: 5 barns, 1, 60x36, good condition; 1, 30x36, new; 1, 30x40, fair; 1, 80x36, fair; granary, 20x24; ashhouse, icehouse, good; henhouse; pigpen, old. Watered, by well and hydraulic ram. Occupied by tenant. Reason for selling, poor health of owner. Price, \$8,000. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address Margaret A. Ricketson, 70 Court St., Plattsburg, N. Y.

No. 379—Farm of 36 acres, located 1 mile from P. O. and railway station at Gabriels, on line of N. Y. C. R. R.; $\frac{1}{4}$ mile from school; 2 miles from churches. Highways, good. Macadamized roads. Nearest large village, Saranac Lake, population 5,000, reached by rail and highway, $7\frac{1}{2}$ miles distant. Surface, nearly level, slight slope to east. Altitude, 1,800 feet. Soil, good loam. Acres in meadow, 30; in natural pasture, 3; acres tillable, 33. Fruit, 1 dozen apple trees. Best adapted to potatoes, oats, hay and hops. Fences, post, wire and board, fair. House, 26x26, with ell, 18x26, 2 stories, excellent condition. Outbuildings: barn, 31x41; shed,



FIG. 12.—HOUSE ON FARM 698, TOWN OF SCHODACK, RENSSELAER COUNTY.



FIG. 13.—HOUSE ON FARM 379, TOWN OF BRIGHTON, FRANKLIN COUNTY.

20x30; horsebarn, 20x30; henhouse, 13x50; icehouse, 16x20, good condition. Watered by well. Occupied by owner. Near largest Adirondack hotels. Adirondack Mountains can be seen from front porch. Good fishing and hunting. Reason for selling, owner has other business. Price, \$3,000. Terms, cash. Address F. M. Barnes, Gabriels, N. Y., Franklin Co.

TOWN OF DICKINSON

Population 1,609

No. 380—Farm of 190 acres, $3\frac{1}{2}$ miles from railway station at Dickinson Center, on line of N. Y. & O. R. R.; 1 mile from school; 50 rods from Baptist church; 1 mile from butter factory; $4\frac{1}{2}$ miles from milk station; 5 miles from condensing plant. Highways, good. Nearest village, Dickinson Center, population 500, $3\frac{1}{2}$ miles distant, reached by highway. Surface of farm, rolling. Soil, sandy and clay loam. Acres in meadow, 30; in natural pasture, 90; in timber, 40, mostly maple, some ash, beech and basswood; acres tillable, 60. Fruit, a good variety of apples. Best adapted to hay, corn, potatoes, oats and other grains. Fences, rail and wire, in fair condition. House, main part, 24x30, woodshed and kitchen attached, in good condition. Barns: one, 24x32; one, 24x36, shed, 40 feet, attached; one 30x40; all in fair condition. Watered, house and barns, by wells; fields, by two brooks. 18 cows included for price given. Crushed stone road now being built leads past farm. Occupied by tenant. Reason for selling, owner unable to work farm. Price, \$6,000. Terms, \$1,000 cash, balance on easy terms. Owner will rent on shares. Address O. W. Saunders, Moira, Franklin Co., N. Y.

No. 381—Farm of 250 acres, located $2\frac{1}{2}$ miles from Dickinson Center P. O.; $2\frac{1}{2}$ miles from St. Regis Falls and Dickinson Center, on line of N. Y. & O. R. R.; 2 miles from school, Methodist, Baptist and Catholic churches; $2\frac{1}{2}$ miles from butter factory. Highways, good. Nearest village, St. Regis Falls, population 2,000, 2 miles distant, reached by highway. Surface of farm, rolling. Soil, rich loam. Acres in meadow, 75; in natural pasture, 75; in timber, 100, birch, beech, maple, spruce and hemlock; acres tillable, 75. Fruit, small apple orchard. Best adapted to wheat, barley, rye, oats, corn and potatoes.

Fences, wire, in good condition. House, 18x24, ell, 20x26, in good condition. Barn, 40x80, ell, 46x54, with shed, in good condition; dairy house, 18x30; granary, 14x24; both in good condition. Watered, house, by well; barns, by running water. This farm is located at the foot of the Adirondack Mountains, 2 miles from St. Regis River. Occupied by owner. Farm is keeping 30 cows, 15 head of young cattle and 2 teams. Good market for timber and wood. Reason for selling, owner has other business. Price, \$7,000. Terms, $\frac{1}{3}$ cash, balance on good security. Address B. L. Orcutt & Sons, Dickinson Center, N. Y.

No. 382—Farm of 171 acres, located $\frac{1}{2}$ mile from Dickinson Centre, P. O., R. D. 2, and $\frac{3}{4}$ mile from railway station, on line of N. Y. & O. R. R.; $\frac{1}{2}$ mile from school and churches; 1 mile from butter factory. Highways in good condition. Nearest large village, Malone, population about 7,000, 17 miles distant, reached by rail and highway. Surface of farm, part level and part rolling. Soil, loam muck. Acres in meadow, 50; in natural pasture, 90; in timber, 30, about 2,000 sugar maples. Acres tillable, 50. Fruit, 30 apple trees. Best adapted to corn, oats, barley, hay and potatoes. Fences, wire, rail and wall. Large house, 16 rooms, bath, good condition. Outbuildings: 3 barns, 1 large shed and granary, good condition. Watered, house by 2 cisterns; barns, by well; fields, by spring and brook. Occupied by owner. Fine trout brook runs through farms. For price and terms address Chas. D. Bacon, Dickinson Centre, N. Y. Owner will rent on shares or with option to buy.

TOWN OF FRANKLIN

Population 1,447

No. 383—Farm of 300 acres, $\frac{3}{4}$ mile from Bloomingdale P. O. and station. Loam soil, suitable for grass and grain. 90 acres meadow; 110 pasture; 100 timber. House, 28x30, with wing, 20x20; tenant house, 26x28; all in good repair. Location good and scenery fine. Barns and outbuildings, large and in good repair. Spring water and good fences. Trout brook crosses farm. Price, \$6,000. Terms, \$1,000 cash, balance on time. Owner will rent, with option to buy. Address L. W. Noble, Bloomingdale, N. Y., Essex Co.

TOWN OF MALONE

Population 10,154

* No. 384—Farm of 53 acres, located 2 miles from Malone P. O., R. D. 2; 2 miles from railway station at Malone, on line of N. Y. C. & H. R. R. R. and Rutland R. R.; $\frac{1}{2}$ mile from school; 2 miles from several churches and butter factory; $2\frac{1}{2}$ miles from milk station. State road. Nearest village, Malone, population 7,000, 2 miles distant, reached by highway. Surface of farm, level. Altitude, 800 feet. Soil, heavy loam. Acres in meadow, 35; in natural pasture, 18; acres tillable, 53. Fruit, common varieties. Best adapted to hay and grain. Fences, rail, in good condition. House, $1\frac{1}{2}$ stories, in fair condition. Outbuildings: 1 horse barn; 1 cow barn; in good condition. Watered, house and barns, by well; fields, by brook. Occupied by owner. Reason for selling, owner wishes to move to village. Price, \$4,500. Terms, \$1,500 cash, balance on bond and mortgage. Address A. B. Parmelee & Son, agents, Malone, N. Y.

No. 385—Farm of 150 acres, located $3\frac{1}{2}$ miles from Malone P. O., R. D. 1; $3\frac{1}{2}$ miles from railway station at Malone, on line of N. Y. C. & H. R. R. R. and Rutland R. R.; $1\frac{1}{2}$ miles from school; $3\frac{1}{2}$ miles from several churches; $1\frac{1}{2}$ miles from butter factory; 3 miles from milk station. Highways, good. Nearest large village, Malone, population 7,000, 3 miles distant, reached by highway. Surface of farm, mostly level. Altitude, 700 feet. Soil, part heavy, part light. Acres in meadow, 30; in natural pasture, 65; in timber, 15, mostly maple; acres tillable, 70. Fruit, 25 trees, common varieties of fruit. Best adapted to corn, grain and hay. Fences, wire and rail, in fair condition. House, $1\frac{1}{2}$ stories, 24x36, in good condition. Barns: one, 25x75; one, 26x36; one, 30x45; one, 26x36; in fair condition; hop kiln, 20x50. Watered, house, by well; barns, by spring; fields, by brook. Trout River on west boundary. Unoccupied. Reason for selling, to settle an estate. Address Jas. Lavery, executor, Malone, N. Y., R. D. 1. Owners will rent.

* No. 386—Farm of 90 acres, located 3 miles from Malone P. O., R. D. 2, and railway station, on line of Rutland and

N. Y. C. R. R.; $\frac{1}{2}$ mile from school; 3 miles from churches, butter factory and milk station. Highways, good. Surface of farm, level. Altitude, about 850 feet. Soil, heavy loam. Acres in meadow, 30; in natural pasture, 25; acres tillable, 90. Fruit, small orchard. Best adapted to hay, grain and potatoes. Fences in fair condition. House, $1\frac{1}{2}$ stories, fair condition. Outbuildings, barn, 40x100, good condition. Watered, house and barns, by running water. Occupied by owner. Reason for selling, ill health of owner. Price, \$4,500. Terms, \$2,000 down, balance on mortgage. Address A. B. Parmelee & Son, agents, Malone, N. Y.

No. 387—Farm of 64 acres, located 3 miles from Malone P. O. and railway station, on line of Rutland and N. Y. C. R. R.; 1 mile from school; 3 miles from churches and milk station; 2 miles from butter factory; 4 miles from milk condensing plant. Altitude, about 700 feet. Soil, gravel loam. Acres in meadow, 40; in natural pasture, 24. Acres tillable, 45. Best adapted to hay, corn, potatoes and grain. Fences, wire and rail, fair condition. House, $1\frac{1}{2}$ stories, fair condition. Outbuildings, barn, 30x40, and barn, 24x30, fair condition. Watered, house and barn, by well; fields, by brook. Occupied by owner. Reason for selling, owner in other business. Price, \$4,300. Terms, \$1,500 down, balance on mortgage. Price includes 13 head of cattle, 2 horses, 2 pigs and 50 hens. Address Fred H. Wing, Malone, N. Y., R. D. 3.

* No. 388—Farm of 50 acres, located $2\frac{1}{2}$ miles from Malone P. O., R. D. 2, and railway station, on line of Rutland and N. Y. C. R. R.; $\frac{1}{2}$ mile from school, $2\frac{1}{2}$ miles from churches; 2 miles from butter factory; 3 miles from milk station. Highways, good. Surface of farm, level. Altitude, about 800 feet. Soil, sandy loam. Acres in meadow, 14; in natural pasture, 8; in timber, 28, hardwood. Acres tillable, 14. Fruit, large orchard. Best adapted to hay, grain and potatoes. Fences in good condition. House, $1\frac{1}{2}$ stories. Outbuildings in good condition; 1 horse barn, 1 cow barn and sheds. Watered by 3 springs and good well. Occupied by tenant. Reason for selling, owner lives in California. Price, \$2,000. Terms cash. Address A. B. Parmelee & Son, agents, Malone, N. Y.

* Farm is in hands of agent or real estate dealer.

* No. 389—Farm of 50 acres located 3 miles from Malone P. O., R. D. 5, and railway station, on line of Rutland and N. Y. C. Rys.; $\frac{1}{2}$ mile from school; 3 miles from churches and milk station. Highways, good. Surface of farm, level. Altitude, about 800 feet. Soil, sandy loam. Acres in meadow, 35; in natural pasture, 15. Acres tillable, 34. Best adapted to hay, grain and potatoes.

Fences in good condition. House, $1\frac{1}{2}$ stories, fair condition. Outbuildings in fair condition. Watered, house and barns by well; fields, by running water. Occupied by owner. Reason for selling, advanced age of owner. Price, \$2,500. Terms, \$1,000 down, balance on mortgage. Address A. B. Parmelee & Son, agents, Malone, N. Y.

FULTON COUNTY

Area, 544 square miles. Population, 44,534. Annual precipitation, 50.62 inches. Annual mean temperature, 46.1° . Number of farms, 1,932. County seat, Johnstown. Located north of the Mohawk river, 45 miles west from Albany.

Its surface features are a rolling and hilly upland in the southern portion rising into a mountainous region in the north. In this part of the county are a large number of lakes forming a characteristic feature of the entire wilderness region of northern New York. The soil in the southern part and along the valleys is mostly a gravelly clay loam and is well adapted to pasturage and dairying, and in the more favorable localities produces excellent crops of grain. Manufacturing is carried on to a large extent, especially in gloves and mittens. More of these commodities are manufactured in Gloversville, Johnstown and the vicinity than are made in all the remainder of the United States. In the northern portion of the county are large tracts of fine timber chiefly owned by the state, though as in other mountain counties private parties have holdings. There are ample facilities for marketing all manufactured and agricultural products. The total valuation of farm property is \$6,808,265. The average price of farm lands per acre including buildings is \$25.30. These figures show a slight increase in value over the value given in 1900. The principal crops are corn, 121,209 bushels; oats, 218,517 bushels; buckwheat, 44,879 bushels; potatoes, 271,868 bushels; hay and forage, 50,479 tons. The number of farms reporting domestic animals is 1,741; dairy cows, 9,835; horses, 4,064; swine, 4,344; poultry, 67,193; milk produced, 4,533,935 gallons. Receipts from the sale of dairy products, \$383,131. There are nine milk stations and factories in the county. In the lower portion there are considerable quantities of apples and small fruits raised. There are 99 district schools and five agricultural organizations. In the larger villages are high schools and academies. The county is noted for its salubrious climate and is the location to which a large summer population go. Sacandaga Park located on the river bearing its name is a noted summer resort.

TOWN OF BROADALBIN

Population 1,845

No. 390—Farm of 181 acres; $\frac{1}{2}$ mile from Union Mills P. O., 3 miles from Broadalbin. Soil, sandy loam, adapted to general farming. Watered by good springs. Price, \$1,500. Terms, part cash, balance on time. Owner will rent for cash, on shares or with option to buy. Address David Blair, Broadalbin, N. Y.

No. 391—Farm of 24 acres, located at Broadalbin, $\frac{1}{2}$ mile from railway station at Broadalbin, on line of F., J. & G. Ry.; $\frac{1}{2}$ mile from school and churches; 1 mile from butter factory and milk station. Highways, macadamized. Amsterdam with a population of 30,000, Johnstown

with population of 12,000 and Gloversville with population of about 19,000, are about 9 miles distant from farm, reached by rail and highway. Surface of farm, level. Altitude, about 800 ft. Soil, part muck and part sandy loam. Acres in meadow, 18; 6 acres tillable. Best adapted to celery, potatoes, corn and grass. Fences, wire, good condition. No buildings. Reason for selling, owner has other business. Price, \$800. Terms, $\frac{1}{2}$ cash. Address J. W. Cleveland, Broadalbin, N. Y.

TOWN OF MAYFIELD

Population 2,065

No. 392—Farm of 150 acres, located $1\frac{1}{2}$ miles from Mayfield P. O., R. D. 2; 2 miles from railway station at Mayfield,

* Farm is in hands of agent or real estate dealer.

on line of F., J. & G. Ry.; 6 miles from butter factory and milk station. Highways, farm is $\frac{1}{2}$ mile from macadamized road. Nearest city, Gloversville, 6 miles distant, population 19,000, reached by rail and highway. Surface of farm, nearly level. Altitude, about 800 ft. Soil, clay and heavy loam, north end, gravel. Acres in meadow, 125; in timber 25, maple, birch and hemlock. Fruit, 200 fine grafted apple trees. Best adapted to hay and grain. Fences, mostly wire, good condition. House, $1\frac{1}{2}$ stories, 12 rooms, fair condition. Outbuildings: 2 large barns; 1 horse barn; 1 wagon house; hog house and hen house. Watered, house, by well; barns, by trout stream. Reason for selling, owner in other business. Price, \$4,500. Terms, \$1,000 cash, balance on easy payments. Address G. W. Haines, agent, Mayfield, N. Y.

* No. 393—Farm of 60 acres, located 2 miles from Mayfield P. O., R. D. 1 and railway station, on line F., J. & G. Ry.; 2 miles from school and churches. Highways in good condition. Nearest city, Gloversville, 8 miles distant, population about 19,000, reached by rail and highway. Surface of farm, part level and part rolling. Soil, heavy loam. Acres in meadow, 40; in natural pasture, 10; in timber, 10, pine, spruce, hemlock, elm and other hardwood. Acres tillable, 40. Fruit, 25 apple trees; a few pears and grapes. Best adapted to hay, oats, corn, potatoes and buckwheat. Fences, wire, good condition. House, $1\frac{1}{2}$ stories, 10 rooms. Outbuildings: barn, 20x45; hay barn; hog house and hen house. Watered, house and barn by running water, fields by springs and creek. Occupied by owner. Reason for selling, owner wishes to retire from business. Price, \$2,000. Terms, arrangements can be made to leave part on mortgage. The cars will stop if flagged at a crossing, 5 minutes walk from the house. Address G. W. Haines, agent, Mayfield, N. Y.

* No. 394—Farm of 110 acres, located $1\frac{1}{4}$ miles from Mayfield P. O., R. D. 1; 1 mile from railway station at Mayfield; on line of F., J. & G. Ry.; $1\frac{1}{4}$ miles from school and churches. Highways in good condition. Nearest city, Gloversville, 8 miles distant, population, about 19,000, reached by rail and highway. Surface

of farm, sloping to the south. Soil, heavy loam. 12 acres in timber, 1,200 large sugar maples. All tillable, except woodland. Best adapted to hay, grain and dairying. Fences, stone walls. House $1\frac{1}{2}$ stories, for two families. Outbuildings: barn, 40x55; basement barn, 20x35; large silo. Watered, house and barn by running water; fields, by springs. Occupied by owner. Reason for selling, advanced age of owner. Cars will stop a few rods from the house by flagging. Price, \$4,000. Terms easy. Address G. W. Haines, agent, Mayfield, N. Y.

*No. 395—Farm of 212 acres located 3 miles from Mayfield P. O.; R. D. 2 and railway station; on line of F., J. & G. R. R.; 20 rods from school; 3 miles from Protestant church. Highways, macadamized road. Nearest city, Gloversville, 9 miles distant, population about 19,000, reached by rail and highway. Soil, clay loam; lowlands. Acres in meadow, 80; in timber, 125, pine, hemlock, elm and hardwood. Acres tillable, 80. A few fruit trees. Best adapted to hay, oats, corn and dairying. Fences, wire and rail. House, $1\frac{1}{2}$ stories; 8 rooms. Out buildings: large barn; wagon house; hen house; hog house and ice house. Watered, house, by well; barns, by well and spring; fields, by springs and creek. Occupied by tenant. Reason for selling, owner in other business. Price, \$3,000. Terms, cash. Address G. W. Haines, agent, Mayfield, N. Y.

* No. 396—Farm of 47 acres, located 1 mile from Mayfield P. O., R. D. 1 and railway station; on line of F., J. & G. Ry.; 1 mile from school and churches; 4 miles from butter factory. Highways in good condition. Nearest city, Gloversville, 7 miles distant, population about 19,000, reached by rail and highway. Surface of farm, rolling. Soil, heavy loam and low land. Acres in meadow, 40; in natural pasture, 7. Acres tillable, 40. Fruit, 15 to 20 apple trees. Best adapted to hay, grain and gardening. Fences, wire and stone walls. House, $1\frac{1}{2}$ stories, old. Outbuildings: barn, 40x50, with basement; horse barn; etc. Watered, house and barn, by well; fields, by spring and large creek. Occupied by tenant. Reason for selling, owner in other business. Price,

* Farm is in hands of agent or real estate dealer.

\$1,800. Terms, easy. There are 3 acres more with a large stone crusher, railroad branch, F., J. & G. Ry.; good shipping point; have done a large business. Stone quarries can be extended out on the farm, the crusher and farm both for \$8,000. Address G. W. Haines, agent, Mayfield, N. Y.

* No. 397—Farm of 90 acres, located $\frac{3}{4}$ of a mile from Mayfield P. O.; R. D. 2; $1\frac{1}{4}$ miles from railway station at Mayfield; on line of F., J. & G. Ry.; $\frac{1}{2}$ mile from school; $\frac{3}{4}$ mile from Protestant churches. Highways, macadamized. Nearest city, Gloversville, 6 miles distant, population about 19,000, reached by rail and highway. Surface of farm, slightly rolling. Altitude, about 800 ft. Soil, clay and sandy loam. Acres in meadow, 40; in natural pasture, 25; in heavy timber, 25, hemlock, spruce, maple and beech. Acres tillable, 40. Fruit, about 50 to 60 apple trees. Best adapted to hay, oats, corn and potatoes. Fences, wire and stone wall. House, 2 stories, cost \$5,000, also tenant house. Outbuildings: large barn, with basement; wagon house and sheds. Watered, house, by well and cistern; barns, by well; fields, by springs and creek. Occupied by owner. Reason for selling, advanced age of owner. Price, \$4,500. Terms, \$1,000 down, balance on easy payments. Address G. W. Haines, agent, Mayfield, N. Y.

TOWN OF NORTHAMPTON

Population 2,228

No. 398—Farm of 70 acres, $1\frac{1}{2}$ miles from P. O. and Sacandaga Park; $\frac{1}{2}$ mile from school. Good sandy loam soil. Good roads. 10 acres timber; balance meadow and pasture. Fences, mostly wire. Young apple trees in bearing and small fruits. House, 36x26, with large wing; piazza on front and one end; all in fairly good condition; well shaded by maples. Barns, 30x40, and 26x36. Water at house and barn. This farm would make an ideal summer boarding house or summer home. It is the first place outside the city limits. Will sell all or part of the land to suit buyer. Price, including all farm tools, \$1,800. Name and address of owner, M. B. Merrell, Northville, N. Y.

No. 399—Farm of 125 acres, located 2 miles from Northampton P. O., 4 miles from railway station, on line of F., J. & G. R. R.; $\frac{3}{4}$ mile from schools and churches; 5 miles from butter factory and milk station. Highways, good. Nearest city, Gloversville, population about 20,000, 12 miles distant, reached by highway. Surface, level. Soil, rich clay loam. Acres in meadow, 50; in natural pasture, 25; in timber, 25, maple, elm and ash; acres tillable, 100. Fruit, no fruit except crab apples. Best adapted to hay, oats, buckwheat, corn and potatoes. Fences, post and wire. House, 36x20. Outbuildings: barn, 36x20, with addition, built 6 years ago. Watered by well and creek. This property is 2 miles from Sacandaga river. Occupied by tenant and owner. Reason for selling advanced age of owner. Price, \$3,000. Terms, \$1,500 down, remainder on mortgage for 5 years. Address Dr. Darius S. Orton, Northampton, N. Y.

TOWN OF OPPENHEIM

Population 1,241

* No. 400—Farm of 140 acres, $2\frac{1}{2}$ miles from Lassellsville P. O., R. D. 2; $5\frac{1}{2}$ miles from railway station at St. Johnsville, on line N. Y. C. R. R.; 2 miles from school; 5 miles from condensing plant. Highways, good. Nearest village, St. Johnsville, population 3,000, reached by highway. Surface of farm, hilly. Soil, sandy loam. Acres in meadow, 20; in natural pasture, 75; in timber, 25, cedar; acres tillable, 40. Best adapted to corn, potatoes, oats. No buildings. Watered, house, by well; barns, by spring; fields, by creek. Reason for selling, to close an estate. Price, \$1,000. Terms, cash. Owner will rent for cash or on shares. Name and address of agent, Harwood Dudley, Johnstown, N. Y.

No. 401—Farm of 135 acres, located 5 miles from St. Johnsville P. O., R. D. 3; 5 miles from railway station at St. Johnsville, on line of N. Y. C. & H. R. R. R.; $\frac{1}{2}$ mile from school and Methodist church; 4 miles from cheese factory; 5 miles from milk station and condensing plant. Highways, good. Nearest village, St. Johnsville, population 3,000, 5 miles distant, reached by highway. Surface of farm, level. Altitude,

* Farm is in hands of agent or real estate dealer.

tude, 1,075 feet. Soil, muck and clay. Acres in meadow, 85; in natural pasture, 50; in timber, 5; acres tillable, 100. Fruit, 100 apple trees, 25 plum trees, 15 pear trees, also 10 butternut trees. Best adapted to hay, grain and potatoes. Fences, wire, cedar posts, in first-class condition. House, main, 30x40, wing, 30x20, wing, 30x18, in first-class condition. Barn, main, 75x45; wagonhouse, 30x25; barn, 40x25; ice-house and chickenhouse, good condition. Watered, house, by well and spring; barn, by spring; fields, by running water, brooks and pond. Near Mohawk river and Canada Lakes. One of the best hay producing farms in the Mohawk Valley. Occupied by owner. Reason for selling, owner intends engaging in other business. Price, \$4,000. Terms easy, will take mortgage. Address John W. Vaughan, St. Johnsville, N. Y.

* No. 402—Farm of 200 acres, 4 miles from Middle Sprite P. O., R. D. 1; 5 miles from railway station at Dolgeville, on line of Dolgeville & Little Falls R. R.; 2 miles from school and Methodist and Catholic churches; 6 miles from milk station and condensing plant. Highways, hilly. Nearest village, Dolgeville, population 3,000, reached by highway. Surface of farm, hilly. Soil, light sandy loam. Acres in meadow, 75; in natural pasture, 100; in timber, 25, hard wood; acres tillable, 100. Fruit, apples. Best adapted to grain. Fences, not good. Well water and creek. Fair barn. Adirondack Mountains and Canada Lakes near. Reason for selling, to close an estate. Price, \$1,000. Owner will rent for cash, on shares or with option to buy. Name and address of agent, Harwood Dudley, Johnstown, N. Y.

* No. 403—Farm of 100 acres, 6 miles from St. Johnsville P. O., R. D. 3; 6 miles from railway station at St. Johnsville, on line of N. Y. C.; 5 rods from churches; 2 rods from school; 6 miles from condensing plant. Highways, good. Nearest village, Dolgeville, population about 3,000, distant 5 miles, reached by highway. Surface of farm, rolling. Soil, sandy loam. Acres in meadow, 75; in natural pasture, 25; in timber, 10, hemlock; acres tillable, 50. Fruit, apples. Best adapted to corn, oats and potatoes. Fences, not

very good. Large brick house, in good condition. Large barn, 75 feet long, in good condition. Watered, house, barn and fields, by well. Near Adirondack Mountains and Canada Lakes. Occupied by owner. Reason for selling, to settle estate. Price, \$5,000. Name and address of agent, Harwood Dudley, Johnstown, N. Y. Owner will rent for cash or on shares.

No. 404—Farm of 150 acres, located 6 miles from St. Johnsville, R. D. 3; 6 miles from railway station at St. Johnsville; on line of N. Y. C. R. R.; $\frac{3}{4}$ mile from school and Protestant church; 5 miles from butter factory; 2 miles from cheese factory; 6 miles from milk station and milk condensing plant. Highways good. Nearest large village, St. Johnsville, population about 3,000. Surface of farm, rolling. Soil, loam. Acres in meadow, 30; in natural pasture, 40; in timber, 40, soft wood. Acres tillable, 30. Fruit, about 50 apple trees. Best adapted to corn, oats and potatoes. Fences, mostly wire, good condition. House, 40x30. Outbuildings: basement barn, 60x30, good condition. Watered, house and barn, by well; fields, by trout streams. Occupied by owner. Reason for selling, ill health of owner. Price, \$2,000. Terms, cash. Address Edgar L. Cline, St. Johnsville, N. Y.

No. 405—Farm of 200 acres, located 3 miles from Dolgeville P. O., R. D. 1 and railway station; on line L. F. & D. R. R.; $\frac{1}{4}$ mile from school; 1 mile from Methodist church; 3 miles from butter factory and milk station; $\frac{1}{2}$ mile from cheese factory; 7 miles from milk condensing plant. Highways good. Surface of farm, rolling. Soil, loam. Acres in meadow, 70; in natural pasture, 60; in timber, 70, hardwood, hemlock and spruce. Acres tillable, 110. Fruit, about 100 apple trees. Best adapted to corn, oats and potatoes. Fences, wire, first-class condition. House, 40x30, good condition. Outbuildings: basement barn, 50x40, good condition; wagon house, good condition; new woodshed and chicken house. Watered, house, by well; barns, by well and running water; fields, by springs and creek. Occupied by owner. Reason for selling, owner has other business. Price, \$3,000. Terms, cash. Address John A. Cross, Dolgeville, N. Y.

* Farm is in hands of agent or real estate dealer.

GENESEE COUNTY.

Area, 507 square miles. Population, 37,616. Annual precipitation, 34 inches. Annual mean temperature, 50°. Number of farms, 3,250. County seat, Batavia. Located in the upper western part of the state.

The surface is mostly level or gently rolling and undulating. The southern part is occupied by ranges of hills, which have an elevation of 200 or 300 feet above the valley. A limestone terrace extends east and west through the county and building stone is extensively obtained from the outcropping ledges of this terrace. The surface is generally covered with a thick drift deposit and the underlying rocks only appear in the ravines of the streams. Nearly all the swamps contain thick deposits of muck and marl, furnishing in abundance the element for future fertility. The soil of the county is generally a very deep and fertile sandy or gravelly loam, intermixed with clay. This county embraces a portion of the celebrated "Genesee Country," which from the first settlement has been famed for its fertility. For many years wheat formed the staple product, but since the opening of the wheat lands of the west this product has gradually given way to a more profitable production of fruit and dairying. The county is well watered and its products find ready sale in the enormous markets that are within short shipping distance over railroads and trolley lines that traverse the county in every direction. The value of farm land including buildings is \$25,044,508. The average price per acre of farm property is \$71.43; twelve years ago it was \$40.41. Showing that farm property in this county has almost doubled in value within the past ten years. The principal crops are corn, 388,719 bushels; oats, 698,648 bushels; wheat, 708,786 bushels; barley, 56,997 bushels; dry beans, 234,101 bushels; rye, 16,778 bushels; potatoes, 1,217,790 bushels; hay and forage, 92,123 tons. There are 3,052 farms reporting domestic animals, dairy cows, 13,768; horses, 12,988; swine, 12,770; sheep, 38,916; poultry, 166,902; milk from the dairies, 6,897,768 gallons, and the total receipts from the sale of dairy products, \$592,660. There are 124 district schools, graded schools, academies and union schools located in many of the towns. There are 15 agricultural organizations whose purpose is to conserve the interest of the farmer. Land values in this county are increasing very rapidly.

TOWN OF DARIEN

Population 1,779

No. 406—Farm of 107 acres, located 1 mile from Corfu P. O., and railway station on line of N. Y. C. R. R.; 1 mile from school, churches, butter and cheese factories and milk station. Highways, good. New state road now being built in front of farm. Nearest city, Batavia, population 11,613, 12 miles distant, reached by highway or railway. Surface, rolling. Soil, sandy loam. Acres in natural pasture, 30; in timber, 27, scrub oak and about 50 big oaks. Apple orchard, 30 trees. Best adapted to corn, wheat, oats, grapes, etc. Fences, wire and board, in good condition. House, 6-room, in fair condition. Outbuildings are in fair condition. Watered by well. Fine neighborhood, good farms all around the place, valued at \$75 to \$100 per acre. Occupied by tenant. Reason for selling, owner not a farmer. Price, \$5,350. Terms, mortgage for \$1,400 at 6%, can remain on place. Address J. H. Blodgett, in care of Underwood Typewriter Co., Buffalo, N. Y.

No. 407—Farm of 165 acres, located $\frac{1}{4}$ mile from Darien P. O., R. D. 14; $\frac{3}{4}$ mile from railway station at Darien; on line of Erie R. R.; $\frac{1}{3}$ mile from school and churches; 7 miles from butter factory; 3 miles from cheese factory; $\frac{3}{4}$ mile from milk station. Highways in fair condition. Nearest large village, Batavia, 14 miles distant, population about 10,000, reached by rail and highway. Surface of farm, slightly rolling. Soil, gravel loam. Acres in meadow, 23; in natural pasture, 20; in timber, 20, maple, fine sugar bush. Acres tillable, 125. Fruit, about 130 trees. Best adapted to alfalfa, corn, wheat, potatoes and cabbage. Fences, wire, good condition. House, new, 12 rooms; also 6-room tenant house, good condition. Outbuildings: barn, 40x70; barn, 28x48; ice house, all in good condition. Watered, house by well; barns, by hydraulic ram; fields, by springs. Occupied by owner. Reason for selling, ill health of owner. Price, \$100 per acre. Terms, \$5,000 down, balance on mortgage. Fine fish pond on farm close to house. Address James C. Lathrop, Darien Center, N. Y., Genesee Co.

No. 408—Farm of 170 acres, located 1 mile from Darien Center P. O., R. D. 12; $\frac{1}{2}$ mile from railway station at Darien; on line of Erie R. R.; 1 mile from school and churches; 3 miles from butter factory and cheese factory; $\frac{1}{2}$ mile from milk station. Highways in good condition. Nearest large village, Attica, 7 miles distant, population about 8,000, reached by rail and highway. Surface of farm, rolling. Altitude, about 1,100 ft. Soil, gravelly loam. Acres in meadow, 35; in natural pasture, 25; in timber, 35, about 500 sugar maples, beech, elm and ash, mostly first growth. Acres tillable, 110. Fruit, about 8 acres of apples, small plum orchard, also quinces, crab apples and grapes. Best adapted to grain, beans and potatoes. Fences, wire and rail, good condition. House, upright, 32x40, with wing, 26x40; 2 stories. Outbuildings: basement barn, 40x90, built 5 years ago; silo; ice house; chicken house and pig pen combined; shed, 20 x30; and sugar house in woods. Wa-

tered, house, by well and cistern; barns, by well; fields, by stream and spring. Occupied by owner. This farm has been in family 97 years. Reason for selling, owner wishes to retire from business. Price, \$10,000. Terms, \$3,000 down, balance on mortgage at 5%. Address Mrs. Wallace Herington, Darien Center, N. Y.

TOWN OF ELBA
Population 1,384

No. 409—Farm of 285 acres, 1 mile from West Shore station, 2 miles from Elba P. O., R. D.; 4 miles from Batavia. Soil, rich, black loam and gravel. 100 acres, meadow; 25, pasture; 10, timber; balance in crops. House, 32x62, modern and in first-class repair. Barns, large and fitted for horse and cattle raising. Spring and brook water. Good fences, 2 tenant houses. Price, \$40,000. Terms, part cash, balance on long time. Address Fred B. Parker, Elba, N. Y., R. D.

GREENE COUNTY

Area, 609 square miles. Population, 30,214. Annual precipitation, 42.7 inches. Annual mean temperature, 47.7°. Number of farms, 2,654. County seat, Catskill.

Located in the southeastern part of the state, bounded on the east by the Hudson River.

The surface is rugged and diversified, with grand picturesque scenery of the Catskill mountains. A large part of the county is covered with forests. The mountains of Greene County lie in four groups which slope from every side into fertile valleys. Clay loam with occasional deposits of gravel characterize the farming portion of the county. There are also soils of limestone formation. The county is traversed by the West Shore and the Kaaterskill, Stony Clove and Catskill railroads. During the summer months thousands of tourists and summer residents visit this wonderful region, giving the farmers a ready market for all their farm produce in their home town. While not excelling in any particular crop the yield of the staples is very good; corn, 189,104 bushels; oats, 207,583 bushels; buckwheat, 92,452 bushels; rye, 58,468 bushels; potatoes, 160,133 bushels; hay and forage, 62,748 tons. The domestic animals are reported as follows: Dairy cows, 15,423; horses, 6,174; swine, 8,245; sheep, 9,708; poultry, 124,075. Average value of farm land, \$17.44 per acre and of improved land, \$37.93 per acre. Amount of milk produced 7,588,116 gallons and the total receipts from dairy products of the eight milk stations in the county, \$711,998. There are 144 district schools in the county and an academy at Catskill, also seven agricultural organizations to promote the farmers' interest. The state has recently bought about 100,000 acres in order to preserve the natural beauty of this historic region.

TOWN OF ATHENS
Population 2,720

* No. 410—Farm of 73 acres, located $1\frac{1}{2}$ miles from Athens P. O., $1\frac{1}{2}$ miles from railway station at West Athens; on line of W. S. Ry.; $\frac{1}{2}$ mile from school; $1\frac{1}{2}$ miles from churches and high school.

Highways, gravel, good. Nearest city, Hudson, 2 miles distant, population about 11,000, reached by highway. Surface of farm, gentle slope. Soil, fine gravel and sandy loam. Acres in natural pasture, 3; in timber, 3, second growth. Acres tillable, 60. Fruit, 100

* Farm is in hands of agent or real estate dealer.

apple, 125 pear, 50 plum and 25 cherry trees. Best adapted to dairying, grain, hay, potatoes and fruits. Fences, wire and stone; fair condition. House, old fashioned; 8 rooms; fair condition. Outbuildings: barn, 36x40, good; barn, 30x20, fair condition. Watered, house and barn, by wells; fields, by brook. Occupied by owner. Reason for selling, owner desires to engage in other business. Price, \$3,500. Terms, $\frac{1}{2}$ cash. Address Frank H. Knox, agent, 469 State St., Albany, N. Y.

TOWN OF CATSKILL

Population 9,066

No. 411—Farm of 120 acres, located $\frac{1}{2}$ mile from Catskill P. O., R. D. 1; $3\frac{1}{2}$ miles from railway station at Catskill, on line of W. S. R. R.; $1\frac{1}{2}$ miles from school; 2 miles from Reformed and Methodist churches. Highways, good. Nearest large village, Catskill, population 5,000, $3\frac{1}{2}$ miles distant, reached by highway. Surface of farm, rolling. Altitude, 800 feet. Soil, clay loam. Acres in meadow, 85; in natural pasture, 15; in timber, 20, oak, chestnut, white pine and hickory; acres tillable, 85. Fruit, 75 apple, 20 pear, 15 cherry trees, 15 grapevines and 15 hickory nut trees. Best adapted to oats, corn, buckwheat, potatoes and hay. Fences, wood, in good condition. House, 20x24, with cellar and ell, 16x22; house, 16x28, with cellar, in good condition. Barns: hay-barn, 28x58, with hay fork; cowbarn, 28x50, with water in it; wagonhouse, 30x52; hayshed, 16x32; granary, 16x16; henhouse, 12x20; woodhouse, 16x20; hogpen, 12x16; all in good condition. Watered, house, by well, short distance, never-failing; barns, by wells; fields by never-failing brook through center of farm. $\frac{1}{2}$ mile from Kaaterskill Creek. A splendid location for raising stock and poultry. The farm contains an unlimited supply of fine gravel. Occupied by owner. Reason for selling, advanced age and ill health of owner. Price, \$5,000. Terms, $\frac{1}{2}$ cash, balance on mortgage at 5%. Address Edwin A. Vedder, Catskill, N. Y., R. D. 1.

TOWN OF COXSACKIE

Population 3,620

No. 412—Farm of about 220 acres and 2 acres muck for fertilizer and pond, located $1\frac{1}{2}$ miles from Climax P. O.; 3 miles from railway station of West Coxsackie, on line of W. S. R. R.; $1\frac{1}{2}$

miles from school; 2 or 3 miles from churches of all denominations. Roads, few hills, good. Nearest villages, Coxsackie and West Coxsackie, about 3 to 4 miles distant, by highway. Surface, rolling to eastward. Soil, mellow loam. 39 acres of timber, hickory, white oak, rock oak, chestnuts and others. Between 300 and 400 apple trees, 100 pear, about 30 plum, and some cherry trees. Can raise rye, oats, corn, buckwheat, potatoes and vegetables of all kinds. Fences, stone, partly good, partly bad. Houses, in fair condition; one of 4 rooms, attic and cellar; one of 9 rooms, 2 cellars. Large barn, with stalls for 4 horses; plenty of timber to build. House watered by spring water piped to door, and well; barn has spring water piped; fields, have running stream for fish, several springs and large pond, or lake, good for boating. Fine view of the Hudson River, 5 miles distant; Catskill Mountains, 15 miles cross country by wagon road. This farm is in a very beautiful location, with fine view; most excellent place for country residence, or for summer boarding house. Good hunting. Occupied by owner. Reason for selling, death of parents and age of present owner. Price, \$5,000. Terms, cash preferred; \$3,000 on first mortgage at 5%. Address C. Doolan, Climax, Greene Co., N. Y., or 148 Jefferson St., Albany, N. Y.

TOWN OF DURHAM

Population 1,475

No. 413—Farm of 140 acres, 1 mile from P. O., on line of Catskill Mountain R. R.; 10 miles from railway station; $\frac{3}{4}$ mile from school and churches; R. D. 1 from Freehold; 1 mile from creamery. Highways, good, rolling. Nearest village, Durham, population about 3,000, 1 mile distant, reached by highway. Occupied by owner. Surface of farm, nearly level. Soil, clay loam, fertile. Acres in meadow, 45; in natural pasture, 85; in timber, 10, hemlock, basswood, elm, hickory and beech; acres tillable, 130. Fruit, 100 apple trees, 25 pear trees, variety of plums, some peaches. Best adapted to grass, corn and all kinds of grain. Fences, wire and rail, in good condition. House, 12 rooms, $1\frac{1}{2}$ stories, first-class condition. Barns: 76x30, with basement and stables for 22 cows, 4 horses, box stall; another, 36x30, with basement. Watered, house, by well and cistern; fields,

by springs and brook; barn, by cistern. Catskill Mountains and Berkshire Hills visible from lawn. Crystal Lake and others 8 miles distant. This farm is beautifully located; would make an ideal country residence. Reason for selling, advanced age of owner. Price, \$6,000. Terms to suit buyer. Name and address of owner, O. W. More, Freehold, N. Y., R. D. 1.

No. 414—Farm of 154 acres, located $1\frac{1}{2}$ miles from station, on line of W. S. R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{2}$ miles from Methodist church; 4 miles from butter factory; $1\frac{1}{2}$ miles from milk station; $1\frac{1}{2}$ miles from Norton Hill village and skimming station. Highways, good. Nearest village, Oak Hill, population 500, distant 3 miles, by highway. Surface, level, sloping slightly to south. Good soil. 50 acres of meadow; 20 acres of natural pasture; 8 acres of timber, of white oak and pine; 125 acres tillable. 150 apple trees and 150 pear trees, all first-class varieties. Land adapted to raising of rye, corn and oats. Fences, of stone and wire, in good condition. Comfortable 12-room house, $1\frac{1}{2}$ stories, 24x36. Good barn, 72x30; sheep-house, 52x18; wagonhouse, 30x24; granary, 20x16; pigpen, 20x16. House has spring water; barns have water in yard; fields have springs. The Catskill Mountains are 8 miles distant. Farm is located on direct road from Coxsackie to Catskill. Occupied by owner. Reason for selling, owner is too old to work it. Price, \$4,000. Terms, $\frac{1}{2}$ cash, balance on mortgage. Owner will rent. Address Barton Miller, Norton Hill, Greene Co., N. Y.

TOWN OF GREENVILLE

Population 1,556

No. 415—Farm of 105 acres, located 3 miles from Greenville P. O., R. D. 2; 11 miles from railway station at Ravena, on line of W. S. R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from Christian, Presbyterian and Episcopal churches; 3 miles from Baptist and Methodist Episcopal churches; $2\frac{1}{2}$ miles from butter factory. Highways, good but rolling. Nearest city, Albany, population 100,000, 22 miles distant, reached by highway, rail from Ravena, or Hudson River boat from Coeymans. Surface of farm, a little rolling. Altitude, 800 feet. Soil, good gravelly loam. Acres in meadow, 35; in natural pasture, 16; in timber, 10,

mostly hard wood, beech, maple, etc.; acres tillable, 80. Fruit, apple orchard, 18 and 20 years old, about 325 very productive trees, standard varieties, 18-year-old pear orchard, 135 trees, standard varieties and productive, also cherries, plums and peaches and small fruits. Best adapted to fruit and all crops grown in this climate; a good dairy, hog and poultry farm. Fences, stone walls and wire, in good condition. House, 2 stories, frame, 24x28; $1\frac{1}{2}$ -story extension, 22x30, with ell wood-house, $16\frac{1}{2}$ x18, painted and with blinds in first-class condition. Local and long distance telephone in house. Barns: 76x30, with stables for 10 cows and 5 horses, in good condition; carriagehouse, 18x26; grainhouse, 14x20, painted, in first-class condition; henhouse, etc. Watered, house, by running water; barns, by well 11 feet deep; fields, by springs and brook. 12 miles from Catskill Mountains and Hudson River. Very desirable property, in excellent neighborhood. Occupied by owner. Reason for selling, advanced age and ill health of owner. Price on application. Terms, cash or part cash, balance on mortgage. Address Eugene Spalding, Greenville, Greene Co., N. Y.

TOWN OF HALCOTT

Population 331

No. 416—Farm of 250 acres, located 2 miles from Halcott Center P. O.; 5 miles from railway station at Fleischmann's on line of U. & D. R. R.; $\frac{1}{4}$ mile from school; 3 miles from Methodist church; 2 miles from butter factory and milk station. Highways, in fair condition. Surface of farm, rolling. Altitude, about 2,000 feet. Soil, red slate. Acres in meadow, 75; in natural pasture, 100; in timber, 50, maple, beech and birch. Acres tillable, 100. Fruit, apples, plums and pears. Adapted to any crop grown in this section. Fences, stone wall and wire, fair condition. House, 3 stories, about 26x50. Outbuildings, barn holds 35 cows, good condition. Watered by springs. Occupied by owner. Reason for selling, owner has retired from business. For price and terms address S. S. Ballard, Halcott Center, N. Y.

TOWN OF LEXINGTON

Population 1,054

No. 417—Farm of 162 acres, located 2 miles from Westkill P. O.; 10 miles

from railway station at Shandaken, on line of U. & D. R. R.; 40 rods from school; 2 miles from Catholic and Protestant churches; 5 miles from butter factory. Highways, good. Nearest city, Kingston, population about 26,000, 35 miles distant, reached by rail and highway. Surface, some hilly, some rolling, some level. Altitude, about 1,600 feet. Soil, some red slate and some sandy loam. Acres in meadow, 20; in natural pasture, 20; in timber, 80, hard and soft. Acres tillable, 60. Fruit, apples, pears, plums, cherries, quinces, berries and grapes. Best adapted to corn, oats, rye, buckwheat, potatoes, etc. Fences, stone wall, wood and wire, good. House, 8 rooms, poor condition. Outbuildings, barn, 30x40, fair condition; shed, 20x30, wagonhouse and hoghouse. Watered by spring. Reason for selling, ill health of owner. Price, \$1,500. Terms, \$500 cash, balance to suit purchaser. Address Chas. E. Ford, Phoenicia, N. Y. Owner will rent for cash or on shares.

TOWN OF NEW BALTIMORE

Population 1,936

No. 418—Farm of 105 acres, located 1½ miles from Grapeville P. O.; 8 miles from railway station at Coxsackie, on line of W. S. R. R. and Hudson River boats; 1 mile from school; 1½ miles from Baptist church; 5 miles from butter factory. Highways, good, partly State road. Nearest large village, Coxsackie, population 3,000, 8 miles distant, reached by highway. Surface of farm, rolling. Soil, good. Acres in meadow, 54; in natural pasture, 25; in timber, 25, hemlock, pine, chestnut and hard wood; acres tillable, 75. Fruit, 200 apple trees, a few pear, plum and cherry trees, also small fruits. 25 butternut trees. Best adapted to rye, buckwheat, oats, potatoes, grass and fruit. Fences, stone and wire, in fair condition. House, 10 rooms and closet, painted, stone cellar, in fair condition; Bell telephone. Barns, ample room, in fair condition.

Watered, house, by well; barns, by running water; fields, by springs and creek. Pond of 1 acre, 35 to 40-horsepower. 9 miles from Hudson River; 16 miles from Catskill Mountains. Good locality for boarders. Occupied by owner. Reason for selling, poor health of owner. Will sell stock, about 20 head, farming tools, reasonably. Price, \$35 an acre. Terms, ⅔ cash, balance to suit purchaser. Address, E. D. Stewart, Urlton, Greene Co., N. Y.

No. 419—Farm of 150 acres, situated 2 miles from Medway P. O., and 5 miles from New Baltimore railway station, on line of W. S. R. R.; R. D. Highways, good. Good soil, adapted to general farming. Acres tillable, 125; acres timber, 12, chestnut, oak and pine, medium size. Fruit, 75 apple trees and some other fruit. Occupied by tenant. Fences, stone and rail, fair condition. House, 25x45, wing, 18x20, fair condition. 2 barns, shed and carriagehouse, in medium condition. Watered by spring, stream and pond. Reason for selling, to settle an estate. Price, \$2,200. Terms, ⅓ cash, balance easy. Owner will rent for cash. Address Burton G. Palmer, Medway, N. Y.

No. 420—Farm of 112 acres, 40 rods from Medway P. O., and 5 miles from railway station, on line of W. S. R. R. Highways, good. Soil, clay, gravel, loam and muck. Acres in meadow, 20; tillable, 75; natural pasture, 15; timber, 7, oak, pine, etc., medium size. Fruit, apples, pears and plums, about 300 trees. Best adapted to general farming or dairying. Fences, mostly stone, in fair condition. House, 30x42, with ell, in fair condition. 2 large barns and outbuildings. Watered, house, by well and cistern; barns, by well and stream; fields, by creek. Reason for selling, to close an estate. Price, \$3,500. Terms, ¼ down, balance easy. Owner will rent on shares. Address B. G. Palmer, Medway, N. Y.

HAMILTON COUNTY.

Area, 1,745 square miles. Population, 4,373. Number of farms, 470. County seat, Lake Pleasant.

This county occupies the central portion of the great wilderness region of northeastern New York.

Its surface is rugged, mountainous, rocky and is mostly covered with forests. Massive ranges of mountains cross each other in various directions. Within the valleys between these mountain ranges are several remarkable chains of lakes,

many of them connected by streams affording boat navigation. These lakes are long and narrow bordered by steep banks and high mountain peaks. The waters are clear, cold and pure and discharge in almost all directions. The entire county is included in what is known as the Adirondack Park which also includes a part of Franklin, St. Lawrence, Essex, Warren and Herkimer counties. The region is much visited by the lover of wild scenery and sportsman and the tourist during the summer months. The region abounds in game and the lakes and streams are well stocked with trout. Peat, iron ore, limestone, sand stone and graphite are found. The number of farms reporting domestic animals is 429, dairy cows, 1,183; horses, 816; swine, 377; sheep, 2,515; poultry, 9,884. These figures show that most of the products raised in this county are for the supply of camps, cottages, hotels, and summer tourists. There were raised however, in the valleys, 3,186 bushels of corn, 8,396 bushels of oats, and 46,324 bushels of potatoes. There is perhaps no locality that is of greater interest to a vast number of people of New York State as it affords a health and recreation resort of the most useful and beneficial character to the public. It has fewer farms than any other county of the state, and yet the farm property is valued at \$1,653,827.

TOWN OF HOPE

Population 258

No. 421—Farm of 160 acres, located $\frac{1}{2}$ mile from Hope P. O.; 8 miles from railway station at Northville, on line of F., J. & G. R. R.; 1 mile from school; $\frac{1}{2}$ mile from Methodist Episcopal church; 8 miles from butter factory; 32 miles from milk station. Highways, fair. Nearest village, Northville, population 1,200, 8 miles distant, reached by highway. Surface of farm, rolling. Altitude, 800 feet. Soil, gravelly. Acres

in meadow, 20; in natural pasture, 40; in timber, 100, hard wood; acres tillable, 20. Fruit, 50 apple trees. Best adapted to corn, oats and potatoes. Fences, good. House, 28x36, in good condition. Barn, 30x40, in good condition. Watered, house, by well; barns, by creek; fields by springs. Sacandaga River bounds one side of farm. Occupied by owner. Reason for selling, advanced age of owner. Price, \$2,000. Terms, cash. Address Phillip V. Monk, Hope, N. Y. Owner will rent.

HERKIMER COUNTY

Area, 1,754 square miles. Population, 56,356. Annual precipitation, 50.68 inches. Annual mean temperature, 43.2°. Number of farms, 3,092. County seat, Herkimer.

This county is situated in the northeastern part of the state and is a long, narrow county. It is intersected by the Mohawk and Black Rivers and also drained by the East and West Canada creeks and the Moose River.

The surface is diversified with high ridges, steep hills, valleys and extensive forests. A large part of the northern portion of the county has the same general features of the other regions of the Adirondacks. The southern part of the county, below the north branch of the West Canada creek, becomes gently undulating and suitable for agriculture. The soil most commonly found is a yellow clay loam, although in the valleys along the West Canada creek and the Mohawk River the black slaty loam predominates. The southern part of the county is intersected by the New York Central railroad and the Erie Canal and the northern part by a branch of the New York Central railroad. Electric lines extend from Little Falls through Herkimer to Utica and from Herkimer to Richfield Springs, Otsego county, thus giving ample local markets. The value of all farm property is \$19,607,700, an increase of 30.4 per cent. over the value shown in 1900. The leading crops are corn, 172,573 bushels; oats, 511,560 bushels; barley, 16,699 bushels; buckwheat, 26,793 bushels; potatoes, 520,121 bushels; hops, 15,200 pounds; hay and forage, 190,797 tons. Average price of improved land is \$29.30. Domestic animals reported: Dairy cows, 40,423; horses, 8,213; swine, 9,754; sheep, 2,957; poultry, 134,528; production of milk, 21,747,574 gallons. Total receipts from sale of dairy products, \$2,175,797. There are 92 milk stations and factories in the county, 183 district schools with academies at Herkimer and Little Falls. These with the splendid high schools of the towns and villages offer

educational privileges of the highest rank for the residents of the county. The agricultural organizations are made up of a county agricultural society and 20 granges.

TOWN OF DANUBE

Population 941

No. 423—Farm of 190 acres, located $1\frac{1}{2}$ miles from Newville P. O., R. D. 5; 5 miles from railway station at Indian Castle, on line of W. S. R. R.; $1\frac{1}{2}$ miles from school, churches and cheese factory; 5 miles from milk station. Highways, good. Nearest city, Little Falls, $7\frac{1}{2}$ miles distant, reached by highway. Surface of farm, fairly level. Soil, loam. Acres in meadow, 90; in natural pasture, 90; in timber, 10, hemlock, pine, hardwood. Acres tillable, 180. Fruit, apples. Best adapted to corn, potatoes and grain. Fences, wire, good condition. House, 24x30, fair condition. Outbuildings, barn, 75x30, poor condition. Watered, house, by well; barn, by running water. Occupied by owner. Price, \$3,500. Terms, $\frac{1}{2}$ down, balance on mortgage. Address D. A. Van Allen, Little Falls, N. Y., R. D. 5.

No. 422—Farm of 300 acres, located 3 miles from Northville P. O., and 3 miles from churches; $\frac{1}{2}$ mile from school. Highways, macadamized. Surface of farm, level and in good condition. Altitude, about 750 feet. Soil, red loam. Acres in meadow, 100; in natural pasture, 75; in timber, 125, mostly pine. Acres tillable, 100. Best adapted to corn, oats and potatoes. Fences, wood and wire, good condition. House, large and in good condition. Outbuildings, large and in good condition. Watered, house, by pipe and well; barns, by pipe and creek. Reason for selling, to close an estate. Price, \$10,000. Terms, easy. Address John P. Harris, Northville, N. Y.

No. 424—Farm of 85 acres, located $1\frac{1}{2}$ miles from Newville P. O.; 4 miles from railway station at Indian Castle, on line of W. S. R. R.; 2 miles from school; $1\frac{1}{2}$ miles from churches and milk station; 4 miles from milk condensing plant. Highways, good. Nearest city, Little Falls, population about 12,000, $6\frac{1}{2}$ miles distant, reached by highway. Surface of farm, rolling. Soil, loam. Acres in meadow, 30; in natural pasture, 41; in timber, 14, hemlock,

beech and maple. Acres tillable, 66. Fruit, 40 apple trees. Best adapted to corn, potatoes and grain. Fences, good. House, 25x30, with summer kitchen. Barn, 38x60. Watered, house and barn, by running water; fields, by streams. Occupied by owner. Reason for selling, ill health of owner. Price, \$5,000. Terms, cash. Address W. P. Jones, Newville, N. Y. Owner will rent with option to buy.

* No. 425—Farm of 50 acres, located 5 miles from Frankfort P. O., R. D. 3, and railway station, on line of W. S. R. R.; 3 miles from cheese factory; 5 miles from milk condensing plant. Surface of farm, part level and part rolling. Soil, clay and loam. Acres in meadow, 25; in natural pasture, 20; in timber, 5, hemlock and maple. Acres tillable, 40. Fruit, apples, plums and cherries. Best adapted to hay, oats, barley and potatoes. Fences, wire with cedar posts. House, upright, 24x30, with wings, 16x20 and 12x14, fair. Outbuildings: barn, 26x52, lean-to attached, 16x52; hogpen, 14x30, and granary, 12x16, fair condition. Occupied by tenant. Reason for selling, owner unable to work farm. Price, \$2,250. Terms, \$1,000 down, balance on time. Address D. V. Brewer, agent, Frankfort, N. Y.

TOWN OF FRANKFORT

Population 5,105

No. 426—Farm of $47\frac{1}{2}$ acres, located $1\frac{1}{4}$ miles from Frankfort P. O., and railway station, on line of W. S. R. R.; 1 mile from school and butter factory; $1\frac{1}{2}$ miles from Catholic and Protestant churches, milk station and milk condensing plant. Surface of farm, slightly rolling toward the East. Good soil. Acres in meadow, $16\frac{1}{2}$; in natural pasture, 26; in timber, 4, maple. 1 acre of garden. Fruit, 8 apple trees. Best adapted to hay. Fences, wire, good condition. Small farm house, needs repairs. Large barn, good condition. Watered by well and spring. Occupied by tenant. Reason for selling, owner lives in village of Frankfort. Price, \$3,250. Terms, \$500 down, balance on time. Address Mrs. Emma Budlong, Frankfort, N. Y. Owner will rent.

* Farm is in hands of agent or real estate dealer.

TOWN OF HERKIMER

Population 8,797

No. 427—Farm of 107 acres, located 5 miles from Herkimer P. O. and railway station, on line of N. Y. C. R. R.; 1 mile from school; 5 miles from churches; 2 miles from butter and cheese factories; 5 miles from milk station; 4 miles from condensing plant. Highways, hilly but good. Nearest village, Herkimer, population 8,500, 5 miles distant, reached by highway. Surface, rolling. Soil, yellow loam. Acres in meadow, 40; in natural pasture, 40; in timber, 25, hard wood, basswood and hemlock; acres tillable, 80. Few apple trees. Best adapted to hay, oats and potatoes. Fences, poor. House, small and old. Watered, house and barns, by well. Not occupied. Reason for selling, owner moved to village. Price and terms on application. Address Mrs. Lucy Sykes, Parish, N. Y.

TOWN OF LITTLE FALLS

Population 638

No. 428—Farm of 166 acres, located 7 miles from railway station at Little Falls, on line of W. S. Ry., R. F. D. passes farm; 50 rods from school and Methodist church; 65 rods from cheese factory; 1 mile from milk station; 7 miles from milk condensing plant. Highways in good condition. Surface of farm, level and rolling. Acres in meadow, 56; in natural pasture, 70; in timber, 6, maple, beech, basswood and hemlock. Acres tillable, 160. Fruit, good apple orchard, also pears and plums. Best adapted to grass, corn, oats and barley. Fences, cedar post and wire, good condition. House, new, 14 rooms, fine condition. Outbuildings: barn, 36x85; cow barn attached, 125x18 ft. Water in house and barn, fields watered by spring. Occupied by tenant. Price, \$46 per acre or \$55 per acre with tools, crops, etc. Address A. B. Davis, 4 John street, Ilion, N. Y. Owner will rent.

TOWN OF NEWPORT

Population 1,490

No. 429—Farm of 75 acres, located 2 miles from Newport P. O. and railway station, on line of M. & M. Ry., $\frac{1}{4}$ mile from school; 2 miles from Catholic and Protestant churches; 2 miles from milk condensing plant. Highways, state road. Surface of farm, meadows, level; pastures, hilly. Soil, gravelly loam. Acres

in meadow, 25; in natural pasture, 35; in timber, 5, hard wood. Acres tillable, 25. Fruit, 50 apple trees. Adapted to dairying, fruit and truck gardening. Fences, stone wall and wire. House, $1\frac{1}{2}$ stories, good condition. Outbuildings: 1 good barn, with silo; hog and hen house. Watered, house, by well; barns, by spring; fields, by brooks. Occupied by tenant. Reason for selling, to close an estate. Price, \$4,000. Terms, \$2,000 cash, balance on mortgage. Address Geo. H. O'Connor, Newport, N. Y. Owner will rent for cash.

No. 430—Farm of 300 acres, located 4 miles from Newport P. O., R. D. 1 and railway station, on line of M. & M. Ry.; 1 mile from school; 4 miles from churches, milk station and milk condensing plant; $1\frac{1}{2}$ miles from butter factory; 1 mile from cheese factory. Highways in fair condition. Surface of farm, rolling. Soil, clay loam. Acres in meadow, 125; in natural pasture, 150; in timber, 25, hard wood and hemlock. Acres tillable, 125. Fruit, 25 apple trees. Best adapted to dairying and grazing. House, 2 stories, with $1\frac{1}{2}$ story wing, good condition. Outbuildings: one barn, 100 ft. long, good condition; hay barn and horse barn. Watered, house, by well; barns, by spring; fields, by spring and brook. Occupied by tenant. Price, \$7,000. Terms to suit buyer. Address E. J. Spellman, 131 Rutger st., Utica, N. Y.

TOWN OF OHIO

Population 527

No. 431—Farm of 156 acres, located 3 miles from Ohio P. O., R. D. 1; 9 miles from railway station at Hinckley, on line of R., W. & O. R. R.; 1 mile from school; 3 miles from Methodist Episcopal church; 4 miles from butter factory and cheese factory; 12 miles from milk station; 20 miles from condensing plant. Highways, good. Surface of farm level. Altitude, 1,500 feet. Soil, sandy loam. Acres in meadow, 40; in natural pasture, 40; in timber, 50, spruce, hemlock, maple and beech; acres tillable, 100. Best adapted to potatoes, oats, corn, buckwheat, etc. Fences, board and wire, in fair condition. House, large and in good condition. Barns: cowbarn, with basement, 40x50; horse barn, 26x35; sheep barn, 26x30; hen-house, 10x20; main cellar, cement floor, all in good condition. Watered, house and barns, by well; fields, by brook and

lake. 5 miles from Adirondack Mountains. 10 rods from West Canada creek. Very healthful climate. Good place for the cure of tuberculosis. Occupied by tenant. Reason for selling, owner's advanced age and ill health. Price, \$2,000. Terms, \$1,000. Address Robt. B. Bussey, Prospect, N. Y. Owner will rent.

No. 432—Farm of 212 acres, located 1 mile from Gray P. O., R. D. 1; 8 miles from railway station at Poland, on line of M. & M. R. R.; $\frac{1}{4}$ mile from school; 1 mile from churches; 1 mile from cheese factory. Roads, good. Surface of farm, rolling. Altitude, 1,200 feet. Soil, heavy loam. Acres in meadow, 50; in natural pasture, 100; in timber, 62, spruce, hemlock, hard wood; acres tillable, 50. Fruit, apples, crabapples and common fruit. Best adapted to hay, oats, barley, rye and potatoes. Fences, mostly stone walls, some wire. House, 30x60, $1\frac{1}{2}$ stories, in good condition. Barns: 30x60, cement floor in basement; horse barn, 22x30; icehouse, 14x18; hogpen, 15x20. Watered, house and barn, by well; fields, by brook. 15 miles from Adirondack Mountains. Occupied by owner. Reason for selling, poor health of owner and scarcity of help. Price, \$2,500. Terms, \$1,500 cash, balance on time. Address John Hemstreet, Cold Brook, N. Y. Owner will rent.

No. 433—Farm of 170 acres, located 9 miles from Poland P. O., R. D. 1, and railway station, on line of M. & M. R. R.; 1 mile from school; 2 miles from churches; 9 miles from milk station. Highways, good. Surface, rolling; meadows, nearly level. Altitude, 1,300 feet. Soil, sandy loam. Acres in meadow, 40; in natural pasture, 90; in timber, 40, hard and soft wood; acres tillable, 100. A few apple trees. Best adapted to oats, rye, buckwheat, corn and potatoes. Fences, wire, in good condition. House, $1\frac{1}{2}$ stories, 22x32, wing, 16x20, in good condition. Barns, one, new, 30x48; one, 44x50, in good condition. Watered, house and barns, by running water; fields, by springs and streams. Occupied by owner. Reason for selling, scarcity of help and poor health of owner's wife. Cheese factory on farm. Price, \$2,200. Terms, \$1,000 cash, balance on mortgage for five years at 5%. Owner will rent for cash or

with option to buy. Address Eugene Hemstreet, Cold Brook, Herkimer Co., N. Y.

TOWN OF SCHUYLER

Population 1,227

* No. 434—Farm of 196 acres, located 6 miles from Frankfort and 4 miles from Utica, on line of N. Y. C. R. R.; 1 mile from school and Methodist church; 2 miles from milk station; 3 miles from cheese factory; 6 miles from milk condensing plant. Highways, in good condition. Surface of farm, rolling. Soil, loam and gravel. Acres in meadow, 40; in natural pasture, 80; in timber, 40, maple, beech, hemlock and basswood. Acres tillable, 40. Fruit, some apples, pears and small fruit. Best adapted to dairying. Fences, in fair condition. House, large, 11 rooms, cost, \$5,000. Outbuildings, 2 large barns, fair condition. Watered, by spring. Occupied by owner. Reason for selling, advanced age of owner. Price, \$6,000. Terms, $\frac{1}{2}$ cash. Address H. H. Ingham, agent, Frankfort, N. Y. Owner will rent with option to buy.

TOWN OF WARREN

Population 1,071

No. 435—Farm of 107 acres, situated in the vicinity of Warren P. O., and Richfield Springs station, on line of D., L. & W. R. R. Loamy soil, adapted to general farming and stock raising. Some fruit. 25 acres timber; 40 acres meadow; 50 acres tillable. House, barns and outbuildings sufficient for farm and in good repair. Well watered. Fairly fenced. Price, \$2,400. Owner will rent with option to buy. Margaret Crouse, owner, Richfield Springs, N. Y., R. D.

TOWN OF WINFIELD

Population 1,386

No. 436—Place of about 10 acres, located $\frac{1}{2}$ mile from West Winfield P. O.; $\frac{3}{4}$ mile from railway station at West Winfield, on line of D., L. & W. R. R.; $\frac{1}{2}$ mile from school, Catholic and Protestant churches; $\frac{3}{4}$ mile from butter factory, cheese factory and milk station. Highways, good gravel roads. Nearest city, Utica, about 22 miles distant, reached by rail and highway. Surface of farm, level. Altitude, about 1,300 feet above sea level. Soil, gravel and loam. Acres in meadow, 6; in natural pasture, 4. All tillable. Fruit, about

* Farm is in hands of agent or real estate dealer.

a dozen apple and pear trees. Best adapted to corn, potatoes, grain, hay and poultry. Fences, wire and picket, good condition. House, large, 12 rooms, good condition. Outbuildings, basement barn about 24x24, good condition. Wa-

tered, house by drilled well. This farm is 500 to 1,000 feet from the head waters of the Unadilla River. Occupied by owner. Price, \$3,200. Terms, \$1,000 down, balance on mortgage. Address Alex. T. Gibson, West Winfield, N. Y.

JEFFERSON COUNTY

Area, 1,868 square miles. Population, 80,382. Annual precipitation, 40.38 inches. Annual mean temperature, 48.2°. Number of farms, 5,778. County seat, Watertown.

This county is located in the northern part of the state, bounded on the northwest by the St. Lawrence River and on the west by Lake Ontario. The Black and Indian Rivers traverse the county affording abundant water power which has not yet been very greatly developed.

The surface is diversified with gentle undulations, abrupt terraces and deep ravines. Along Lake Ontario and the St. Lawrence River the soil is the same gravelly alluvium found near the shore of the other lake counties. Further inland the surface is generally level or gently undulating. On the second level ranging from 600 to 900 feet above the lake the surface is more rolling and the soil becomes a rich, clay loam. Southeast of this, and extending into Lewis County, the surface is hilly and diversified with deep ravines and abrupt terraces. Clay loam soil still predominates, but much black loam is found. A large part of the county is covered with forest in which ash, oak, pine, hemlock, beech, spruce and sugar maple are found. The well-known Potsdam sandstone is found in this county and also extensive deposits of iron ore.

The following crops were reported: Corn, 240,800 bushels; oats, 2,050,568 bushels; barley, 80,141 bushels; buckwheat, 32,950 bushels; dry beans, 15,632 bushels; potatoes, 789,027 bushels; hay and forage, 341,544 tons. The value of all farm property is \$40,095,331, an increase of 27.6 per cent. over the census of 1900. The average value of improved land in the county is \$43.13 per acre. Domestic animals, dairy cows, 64,855; horses, 17,746; swine, 19,818; sheep, 12,059; poultry, 230,378. Total product of milk, 32,881,485 gallons and the total receipts from the sale of dairy products, \$3,287,056. The county is intersected and traversed in several directions by the R., W. & O. railway lines and trolley lines, giving ample transportation facilities. Watertown, a great railroad center, is the headquarters of the Watertown Produce Exchange, the greatest cheese market in the United States. Along the St. Lawrence shore are located many large hotels and cottages which accommodate the thousands of tourists who annually visit the Thousand Islands, thus a great local market is had for all farm produce. There are 347 district schools in the county with academies at Watertown and Carthage; 168 dairy stations and factories furnish nearby market for milk. There are two county fair societies, one Holstein-Friesian breeder's club, one Patron of Industry, 3 subordinate granges and one Pomona grange, all organized and worked for some one or more agricultural interest.

TOWN OF ALEXANDRIA

Population 4,259

No. 437—Farm of 240 acres, located 2½ miles from Alexandria Bay P. O., R. D. 1; 6 miles from railway station, on line of N. Y. C. R. R.; 1½ miles to trolley line; ¼ mile from school; 2½ miles from churches; 2¼ miles from butter factory and cheese factory; 6 miles from milk station. Highways, State road. Several parks and summer homes of wealthy people near this farm so there is a good market. The nearest large village is Alexandria Bay, located

on the St. Lawrence River, a great summer resort for tourists from all over the United States. Surface of farm, rolling. Soil, clay and clay loam. Acres in meadow, 135; in natural pasture, 75; in timber, 30, elm, ash, maple, etc. Acres tillable, 175 to 200. Fruit, some apples and cherries. Best adapted to hay, grain and vegetables. Fences, stone wall, rail, post and wire, good condition. House, 20x30, with wing, 14x32. Outbuildings ample for size of farm. Watered, house, by water piped; barns, by pump; fields, by springs and creek. Occupied by tenant. Reason for selling, advanced age

of owner. Price, \$38 per acre. Terms, from 50 to 75% can remain on mortgage at 5%. Address T. F. Kavanaugh, Alexandria Bay, N. Y.

TOWN OF CHAMPION

Population 2,704

* No. 438—Farm of 200 acres, located $3\frac{1}{2}$ miles from Copenhagen P. O. and railway station, on line of C. & C. R. R.; $\frac{1}{2}$ mile from school; $3\frac{1}{2}$ miles from churches; $\frac{3}{4}$ mile from butter factory and milk station. Highways, good. Nearest large village, Copenhagen, population 585, $3\frac{1}{2}$ miles distant, reached by rail and highway. Surface, rolling. Soil, clay loam. Acres in meadow, 100; in natural pasture, 60; in timber, 40, mostly beech, some maple; acres tillable, 200. Best adapted to timothy, clover, corn, oats, etc. Fences, in good condition. House of 9 rooms, in good repair, very warm, good cellar, cistern in cellar. Barn, in fair condition, 34×120 , with basement stable, 15×120 . Watered by wells. Lake adjoins property. Occupied by tenant. Reason for selling, advanced age of owner. Purchase price includes dairy. Price, \$6,500. Terms, \$2,000 down, balance on easy terms. Address J. H. McLear, agent, Gouverneur, N. Y.

* No. 439—Farm of 370 acres, located 3 miles from Copenhagen P. O.; 5 miles from railway station at Copenhagen, on line of C. & C. R. R.; $\frac{1}{4}$ mile from school; $\frac{1}{2}$ mile from churches; butter factory and cheese factory on farm. Highways, good. Nearest village, Copenhagen, population 585, 3 miles distant, reached by highway. Surface of farm, rolling. Soil, loam. Acres in meadow, 250; in timber, 50, part hard and part soft; acres tillable, 320. Best adapted to timothy, clover, oats and grain. Fences, excellent. 3 good houses and a cheese factory on farm. Large barns, in excellent condition. Watered, house and barns, by wells; fields, by springs and creeks. $1\frac{1}{2}$ miles from Pleasant Lake. Will leave 45 cows, 15 head of young cattle, sugaring tools and farming tools. Occupied by owner. Reason for selling, owner unable to give farm proper attention. Price, \$18,500. Terms, \$3,500 cash, balance on mortgage at 5%. Address J. H. McLear, agent, Gouverneur, N. Y.

TOWN OF CLAYTON

Population 4,028

No. 440—Farm of 99 acres, $3\frac{1}{2}$ miles from Clayton P. O.; $3\frac{1}{2}$ miles from Lafargeville railway station, on line of R., W. & O. branch of N. Y. C. R. R.; R. D. from Clayton. Nearest village, Clayton. Highways, fair. Soil, loam and some sand. Acres tillable, 50; natural pasture, 25; timber, 24, hickory, maple, elm, butternut, basswood and pine. Fruit, apples. Best adapted to oats, corn, hay, wheat and dairying. Fences, stone, rail and wire, in fair condition. House, 26×35 , wing, 14×20 . Barns: one 30×40 , and one 12×20 , stables for 9 cows and 3 horses. House watered by well; barns, by well; fields, by spring. The buildings are worth price asked for farm. Reason for selling, advanced age of owner. Price, \$2,600. Terms easy. Address Mrs. Margaret Rogers, Clayton, N. Y., or A. C. Hill, 14 Chestnut Street, Albany, N. Y.

No. 441—Farm of 153 acres, 4 miles from Cape Vincent station and 10 miles from Clayton P. O. This farm is located on Carlton Island; has 1 mile shore front on St. Lawrence River. All fine farming land. House, 2 stories, 20×40 , with wing, in good repair. Barn, 40×80 , stable for 30 cows, new creamery with icehouse, gas engine and feed mill, in good condition. Granary, chickenhouse and hoghouse. Watered by St. Lawrence River. Price, \$75 per acre. Terms, \$2,000 cash, balance on time. Name and address of owner, F. L. Hall, Clayton, N. Y. Owner will rent on shares.

TOWN OF ELLISBURG

Population 3,634

No. 442—Farm of 143 acres, located $1\frac{1}{2}$ miles from Pierrepont Manor P. O., R. D. 1; 2 miles from railway station, at Pierrepont Manor, on line of R., W. & O. R. R.; $1\frac{1}{2}$ miles from school and Protestant churches; 2 miles from cheese factory and milk station. Highways, somewhat hilly. Surface of farm, rolling. Altitude, about 600 feet. Acres in natural pasture, 50; in timber, 10, maple, beech and basswood. Acres tillable, 83. Fruit, good apple orchard. Best adapted to corn, hay, oats, buckwheat and potatoes. Fences, barbed wire. House, 14 rooms, good condition. Outbuildings, not modern, but in good

* Farm is in hands of agent or real estate dealer.

repair; horsebarn, 26x36, cornhouse, 12x18, henhouse, 10x30, silo, 16x26. Watered by well and cistern. Occupied by tenant. Reason for selling, to close an estate. This farm is 20 miles from Watertown which has a population of about 26,000; 9 miles from Adams and $\frac{1}{8}$ of a mile from small school. Price, \$6,000. Terms, \$4,000 down, balance on mortgage at 5%. Address Mrs. Hibbard, 209 N. Washington St., Rome, N. Y.

TOWN OF LE RAY

Population 2,555.

No. 443—Farm of 100 acres, located $1\frac{1}{2}$ miles from Black River P. O., R. D. 1; 2 miles from Black River railway station, on line of N. Y. C. R. R.; $1\frac{1}{2}$ miles from school; $1\frac{1}{4}$ miles from churches; 2 miles from butter factory and cheese factory; $1\frac{1}{2}$ miles from milk station. Highways, good. Surface of farm, rolling. Altitude, about 300 feet. Soil, sandy loam, clay loam and muck. Acres in meadow, 30; in natural pasture, 20; in timber, 20, oak, pine and maple. Acres tillable, 60. Fruit, 50 large bearing apple trees. Best adapted to grain. Fences, wire, mostly good. House, 25x45, fair condition. Outbuildings: one horse and cowbarn, 35x50, one hay storage barn, 20x35; granary 15x20, fair condition. Watered, house and barn by well; fields by springs. Occupied by owner. Reason for selling, owner going south for health. Price \$1,600. Terms, \$1,000 cash, balance on easy terms. Address Ambrose Stamford, Black River, N. Y., R. D. 1.

TOWN OF LORRAINE

Population 940

No. 444—Farm of 90 acres, $4\frac{1}{2}$ miles from Adams and $2\frac{1}{2}$ miles from the village of Lorraine; farm called Cherry Hill Farm. House, large and in good condition. Highways, good. Barns, fair size and in good condition. Fences, good. Watered by streams and springs. Fruit, pears, apples, grapes, cherries and plums. Adapted to grain and dairying. Sufficient timber, hemlock and other wood for the use of farm. This is a very desirable farm and can be bought for \$2,400. For terms, etc., address owner, Mrs. Mary G. Bishop, Adams, N. Y., R. D. 2.

* No. 445—Farm of 130 acres, located $3\frac{1}{2}$ miles from Lorraine P. O., R. D.

1; $8\frac{1}{2}$ miles from railway station at Adams, on line of N. Y. C. R. R.; 2 miles from school; $3\frac{1}{2}$ miles from Catholic and Protestant churches and milk station; $3\frac{1}{2}$ miles from butter factory; 2 miles from cheese factory. Highways, good. Altitude, 600 feet. Soil, gravel loam. Acres in meadow, 40; in natural pasture, 50; in timber, 10, mostly maple. Acres tillable, 100. Best adapted to grain and potatoes. Fences, mostly wire, good. House, 25x40. Outbuildings: horse and cowbarn; basement stable, 40x90, built 8 years ago; hog pen, 20x30. Watered, house and barn by well, fields by springs. Occupied by owner. Reason for selling, ill health of owner. Price, \$2,750. Terms, \$1,500 cash, balance on easy terms. Address Geo. N. Brown, Agent, Watertown, N. Y.

* No. 446—Farm of 215 acres, located 2 miles from Lorraine P. O., R. D. 1; 7 miles from railway station at Adams, on line of N. Y. C. R. R.; 40 rods from school; 2 miles from Protestant churches, and cheese factory. Nearest large village, Adams, 7 miles distant; population about 2,000; reached by highway. Surface of farm, rolling. Soil, gravelly. Acres in meadow, 50; in natural pasture, 110; in timber, 50, mostly hard maple. Acres tillable, 75. Fruit, apples. Best adapted to hay, corn and oats. Fences, wire, cedar posts, fair condition. House, 24x30, with wing, 24x24. Outbuildings: cowbarn, 36x60 with ell, 40x42; horsebarn, 30x36, good condition. Watered, house and barns by windmill, fields by a running creek. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$20 per acre. Terms, half down. Address L. S. Pitkin, agent, Lorraine, N. Y. Owner will rent on shares.

* No. 447—Farm of 300 acres, located 2 miles from Lorraine P. O., R. D. 1; 7 miles from railway station at Adams, on line of N. Y. C. R. R.; 40 rods from school; 2 miles from Protestant churches, butter factory and cheese factory; 7 miles from milk station. Highways, good. Surface of farm, rolling. Soil, gravelly loam. Acres in meadow, 90; in natural pasture, 150; in timber, 60; mostly beech and maple. Acres tillable, 175. Fruit, apples. Best adapted to hay, corn, potatoes and oats. Large double house. Outbuildings: main barn,

* Farm is in hands of agent or real estate dealer.

30x50, with ell, 30x40, and 3 other barns. Watered by windmill. Trout creek runs through farm. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$6,000. Terms, $\frac{1}{3}$ down, balance on long time at 5%. Address L. S. Pitkin, agent, Lorraine, N. Y. Owner will rent on shares.

TOWN OF LYME

Population 1,955

*No. 448—Farm of 625 acres, located 2 miles from Three Mile Bay P. O.; 2 miles from railway station at Three Mile Bay, on line of N. Y. C. R. R.; $1\frac{1}{2}$ miles from school; 3 miles from churches; butter factory and cheese factory; $2\frac{1}{2}$ miles from milk station; 4 miles from the village of Chaumont, 600 population; a popular summer resort. Three Mile Bay Creek crosses this farm, thus furnishing plenty of good water. Highways, good. Nearest city. Watertown, population about 26,000, 18 miles distant, reached by rail and highway. Surface of farm, mostly level. Altitude, 250 feet. Soil, clay limestone. Acres in meadow, 400; in natural pasture, 200; in timber, 60, basswood and maple; acres tillable, 400. Best adapted to oats, corn, hay, barley, potatoes, clover and alfalfa. Fences, wire and rail, good condition. House, 10 rooms, 2 stories, excellent condition. Outbuildings: 2 large barns, with ell, good condition. Watered by well and Three Mile Bay Creek. Farm is 4 miles from Lake Ontario. Reason for selling, to close an estate. Price, \$19,000. Terms, \$5,000 or more cash, balance on bond and mortgage at 5%. About 40 head of stock included in above price. Address Edward Z. Anthony, agent, Mannsville, N. Y.

*No. 449—Farm of 1,400 acres, located 3 miles from Chaumont P. O. and railway station, on line of N. Y. C. R. R.; $\frac{1}{2}$ mile from school; 3 miles from churches, butter factory and milk station; 1 mile from cheese factory. Highways, good. Nearest city, Watertown, population about 26,000, reached by rail and highway. Surface, level. Altitude 260 feet. Soil, clay limestone. Acres in meadow, 800; in natural pasture, 600; in timber, 100, second growth; acres tillable, 1,000. Small amount of fruit. Best adapted to oats, barley, corn, potatoes, peas, buckwheat

and dairying. Fences, wire and rail, good condition. House, medium size, good condition. Outbuildings: two new first-class stock barns, stables and silos. Watered by well and river. This farm is located 4 miles from Lake Ontario. Occupied by tenant. Reason for selling, to close an estate. Price, \$22.50 per acre. Terms to suit purchaser. Good place for colony. Address Edwin Z. Anthony, agent, Mannsville, N. Y.

TOWN OF RODMAN

Population 1,123

*No. 450—Farm of 193 acres; located 1 mile from Worthville P. O.; 8 miles from railway station at Adams, on line of N. Y. C. & H. R. R. R.; 1 mile from school, churches, cheese factory and milk station. Highways, good. Nearest village, Adams, population 1,458, 8 miles distant, reached by highway. Surface of farm, slightly rolling. Soil, gravelly loam. Acres in timber, 25, mostly first growth maple. All except woodland tillable. Fruit, a few apple trees. Best adapted to timothy, clover, oats and corn. Fences, in good condition. House, 7 rooms, good cellar. Barns: cow barn, 55x90, concrete floor; 35x42; in good condition. Watered, house, by cistern in cellar and well; barns, by well; fields, by creek through pasture. Will leave hay and fodder and some implements but no dairy. Unoccupied. Reason for selling, advanced age of owner. Price, \$2,500. Terms, \$500 cash, balance on mortgage at 5%. Address J. H. McLear, agent, Gouverneur, N. Y.

TOWN OF RUTLAND

Population 1,862

*No. 451—Farm of 300 acres, located 7 miles from Watertown P. O.; 7 miles from railway station at Copenhagen, on line of C. & C. R. R.; $\frac{1}{4}$ mile from school; 1 mile from churches; $1\frac{1}{2}$ miles from butter factory and cheese factory. Highways, good. Nearest city, Watertown, population 26,000, 7 miles distant, reached by highway. Surface of farm, rolling. Altitude, 1,500 feet. Soil, clay loam. Acres in meadow, 150; in timber, 75, beech, maple and hemlock; acres tillable, 225. Several apple trees. Best adapted to timothy, clover, corn, wheat and oats. Fences, mostly wire, in good condition. House, 10 rooms, in good repair. Barn, 40x90, in good con-

* Farm is in hands of agent or real estate dealer.

dition. Watered, house, by well and spring in cellar; barn, by well; fields, by springs and brooks. Will leave 25 cows, hay, straw and fodder. Occupied by owner. Price, \$7,500. Terms, \$2,500 cash, balance on mortgage at 5%. Address J. H. McLear, agent, Gouverneur, N. Y.

TOWN OF THERESA

Population 2,036

*No. 452—Farm of 99 acres, located 2 miles from Theresa P. O. and railway station, on line of N. Y. C. R. R.; 1 mile from school; 2 miles from church; 1 mile from milk station and condensing plant. Highways, good. Nearest large village, Theresa, population 932, 2 miles distant, reached by rail and highway. Surface, generally level, some rolling. Soil, sandy loam. Acres in meadow, 40; in natural pasture, 60; acres tillable, 99. Best adapted to timothy, clover, corn, small grain, etc. Fences, in good condition. House, good size, in good condition. Barn, 30x40, with 13 stanchions and 4 horse stalls. Watered by well. Creek at one corner of the property. Occupied by tenant. Reason for selling, ill health of owner. Purchase price includes dairy. Price \$2,500. Terms, cash. Address J. H. McLear, agent, Gouverneur, N. Y.

*No. 453—Farm of 100 acres, located 1½ miles from Theresa P. O. and railway station, on line of N. Y. C. R. R.; 1 miles from school; 2 miles from churches; 1 mile from butter factory, cheese factory and milk station. Highways good. Altitude about 400 ft. Soil, sandy loam. Acres in meadow, 60; in natural pasture, 40. Acres tillable, 100. Adapted to truck gardening, corn, etc. Fences good. House in fair condition. Outbuildings: 1 barn, 30x40; granary, 18x22; henhouse and hog pen; good condition. Watered, house, by well; barns, by well and spring; fields, by spring. Occupied by owner. Reason for selling, owner in other business. Price, \$2,500. Terms, ½ cash, balance on time. Address D. L. Coe, agent, Theresa, N. Y.

TOWN OF WILNA

Population 6,218

No. 454—Farm of 92 acres, located 2 miles from railway station at Natural Bridge, 6 miles from Carthage P. O., R. D. 1.; 6 miles from railway station at

Carthage, on line of N. Y. C. & H. R. R. R.; 1 mile from school; 2 miles from churches; 1 mile from butter factory and cheese factory; 2 miles from milk station. Highways, stone and gravel. Nearest village, Carthage, population 3,800, 6 miles distant, reached by highway. Soil, black loam. Acres in meadow, 30; in natural pasture, 60; in timber, 10, hard wood; acres tillable, 30. Best adapted to oats. Fences, wire and stone wall. House, 1½ stories, in good condition. Watered, house, by well, and fields, by creek. Occupied by tenant. Reason for selling, owner has other business. Price, \$1,500. Address Lalor Sarvy, Carthage, N. Y. Owner will rent.

TOWN OF WORTH

Population 597

No. 455—Farm of 170 acres, 1 mile from Worth P. O.; 8 miles from Adams station, on N. Y. C. R. R. Gravelly loam soil. Adapted to grass and grain. 600 large sugar maple trees. Large house. 2 barns, in first-class condition. Watered by well, brooks and springs. Good rail and wire fences. Situated on main road between villages of Worth and Lorraine, and is a fine dairy farm. Price, \$6,000. Terms, ½ cash, balance on easy terms. Owner, E. E. Greenley, Adams, N. Y., R. D.

No. 456—Farm of 100 acres, 8 miles from Adams P. O., R. D. 1; 100 rods from church. Highways, in excellent condition. Soil, gravel and clay loam, Acres, meadow, 55; pasture, 40; timber, 5. House, 16x24. Barns, recently burned. Sufficient timber on place to furnish material for new barn. Watered by 2 creeks and spring. Fences, wall and rails, well fenced all around and cross fences. This is a fine farm and will be sold very cheap on account of loss of barns. Price, \$1,800. Terms, \$1,000 down and the balance to suit the purchaser. Has 51 acres more for sale, located 1¼ miles from above described farm. Will sell all together or separate. Land well watered by spring and running brook. Good barn, 28x38. No house. Will take \$20 per acre. Terms, ½ down. Will also sell store with farm, if desired. Name and address of owner, Daniel Groves, Adams, N. Y.

No. 457—Farm of 83½ acres, located 3½ miles from Lorraine P. O., R. D. 1;

* Farm is in hands of agent or real estate dealer.

8 miles from railway station at Adams, on line of R. W. & O. R. R.; 1 mile from school; $\frac{1}{4}$ mile from church, $1\frac{1}{2}$ miles from cheese factory; 2 miles from milk station; $3\frac{1}{2}$ miles from condensing plant. Highways, good. Nearest large village, Adams, population 1,458. Surface, mostly level, some rolling. Soil, clay, loam and gravel. Acres in meadow, 50; timber, 5, birch and maple; acres tillable, 50. 18 apple trees. Best adapted to oats, barley, potatoes and corn. Fences, in good condition. House of 9 rooms, newly shingled. Barn, 30x42, stable under for 13 head of cattle. Watered by well. Good trout brook runs through middle of farm. Occupied by owner. Reason for selling, owner has other business. Will sell the farming tools and cows for just what they are worth, or such part of them as the buyer desires. Any person interested

will be met at Adams, N. Y., if owner is notified in time. Price, \$1,600. Address J. W. Reynolds, Evans Mills, N. Y.

No. 458—Farm of $6\frac{1}{4}$ acres, located in village of Worth, 8 miles from railway station at Adams, on line of N. Y. C. R. R.; $\frac{1}{8}$ mile from butter factory and cheese factory; 8 miles from milk station. Surface of farm rolling. Altitude about 700 ft. Soil, loam. Acres in meadow, $6\frac{1}{4}$. Acres tillable, 6. Best adapted to potatoes and grain. Fences good. House, 24x36; store below having room above. Barn, 18x40; garage, 12x20. Watered by well. Occupied by owner. Reason for selling, owner wishes to retire from business. Price, \$1,000. Terms, \$500 down, balance on time. Good trout fishing and plenty of deer within 2 miles. Address C. W. Van Brockein, Worth, N. Y. Owner will rent.

LEWIS COUNTY

Area, 1,288 square miles. Population, 24,849. Annual precipitation, 36.79 inches. Annual mean temperature, 45.1°. Number of farms, 3,343. County seat, Lowville.

This county is situated north of the Mohawk Valley in the north central part of the state. It is drained by the Black, Beaver, Moose and Oswegatchie Rivers. The surface is hilly and broken except along the Black River which flows through the center of the county from south to north. Along this wide valley the soil is of a rich limestone formation and the surface is gently rolling with some level tracts. To the east of these the land rises in abrupt broken hills to an elevation in some places of 1,200 feet above the valley. The hills are covered with forests of sugar maple, pine, spruce, birch, hemlock and other trees, and are too rough for cultivation. In the western portion of the county the hills are mostly long sloping ridges with fertile clay loam soils. Trenton limestone is found in parts of the county. Agriculture is the chief industry. The principal products are corn, 37,522 bushels; oats, 668,966 bushels; barley, 41,283 bushels; potatoes, 627,771 bushels; hay and forage, 156,063 tons. Farm property reaches a total valuation of \$16,288,674, an increase of 24.7 per cent. in the past ten years. The average price of improved land per acre is \$28.16. Farms report the following domestic animals: Dairy cows, 36,291; horses, 8,037; swine, 12,256; sheep, 5,225; poultry, 98,569. Milk produced, 18,435,828 gallons. Total receipts from the sale of dairy products is \$1,611,947. The county is thoroughly well equipped with transportation facilities. There are 208 district schools; 106 stations and factories where milk finds a ready market; an agricultural society which holds an annual fair; twenty-one granges and one Pomona grange. The production of cheese of all kinds is very large.

TOWN OF DENMARK

Population 1,889

*No. 459—Farm of 194 acres, located $2\frac{1}{2}$ miles from Copenhagen P. O. and railway station, on line of C. & C. R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from cheese factory; 75 rods from milk station; $2\frac{1}{2}$ miles from condensing plant. Highways, good. Nearest village, Copenhagen, population, 1,000; $2\frac{1}{2}$ miles

distant; reached by rail and highway. Surface, rolling. Soil, clay loam. Acres in meadow, 160; in timber, 30, mostly maple and beech, some cedar; acres tillable, 160. Best adapted to hay, corn, small grains, etc. House, 9-room, in good condition, good cellar. Barns, in very good condition. Watered, house, by well; barns, by running water. Price, \$11,000, includes dairy. Address J. H. McLearn, agent, Gouverneur, N. Y.

* Farm is in hands of agent or real estate dealer.

*No. 460—Farm of 250 acres, located at limits of Copenhagen village, $\frac{1}{2}$ mile from railway station, on line of C. & C. R. R.; $\frac{1}{2}$ mile from school and churches; $\frac{3}{4}$ mile from cheese factory and milk station, reached by highway. Surface, rolling. Soil, clay loam. Acres in meadow, 160; in natural pasture, 90; in timber, 30, maple, elm and hemlock; acres tillable, 220. Best adapted to timothy, clover, corn, small grain, etc. Fences, in good condition. Good house. Barns in good repair. Watered, by well; fields, by springs. Deer River borders farm. Occupied by owner. Reason for selling, old age of owner. Price includes dairy. Price \$10,500. Address J. H. McLearn, agent, Gouverneur, N. Y.

*No. 461—Farm of 95 acres, located $1\frac{1}{2}$ miles from Copenhagen P. O. and railway station, on line of C. & C. R. R.; $1\frac{1}{2}$ miles from school, churches and cheese factory. Highways, good. Nearest village, Copenhagen, population, 1,000 $1\frac{1}{2}$ miles distant, reached by rail and highway. Surface, rolling. Soil, clay loam. Acres in meadow, 75; in natural pasture, 20; in timber, 6, mostly second growth maple; acres tillable, 75. Best adapted to hay, corn, small grains, etc. Fences, in good condition. House, 5 rooms, in good condition, good cellar. Cow barn, 40x60. Watered by wells. Occupied by owner. Reason for selling, old age of owner. Purchasing price includes dairy. Price \$4,000. Would trade for house and few acres of land near good village. Address J. H. McLearn, agent, Gouverneur, N. Y.

*No. 462—Farm of 277 acres, located 2 miles from Copenhagen P. O.; 2 miles from railway station at Copenhagen, on line of C. & C. R. R.; 1 mile from school; 2 miles from churches and butter factory. Highways, good. Nearest village, Copenhagen, population 1,000, 2 miles distant, reached by rail or highway. Surface of farm, rolling. Soil, loam. Acres in meadow, 125; in natural pasture, 50; in timber, 25, hard and soft; acres tillable, 250. Fruit, a few apples trees. Best adapted to timothy, clover, oats and corn. Fences, good. House, in fair condition. Barn, large, in poor condition. Watered, house and barns, by well; fields, by springs and river. Deer River bounds farm. Reason for selling, owner cannot give

farm proper attention. Price \$6,500. Terms, \$1,500 cash, balance on mortgage at 5%. Will leave 30 cows, all hay, straw and fodder. Address J. H. McLearn, agent, Gouverneur, N. Y.

*No. 463—Farm of 75 acres, located $\frac{1}{2}$ mile from Copenhagen P. O.; $\frac{1}{2}$ mile from railway station at Copenhagen, on line of C. & C. R. R.; $\frac{1}{2}$ mile from school; $\frac{1}{4}$ mile from churches; $\frac{1}{2}$ mile from butter factory, cheese factory and milk station. Highways, good. Nearest village, Copenhagen, population 1,000, $\frac{1}{2}$ mile distant, reached by highway. Surface of farm, rolling. Soil, loam. Acres in meadow, 73; in timber, 2, maple; all tillable except woodland. Fruit, a few apple trees. Best adapted to timothy, clover, oats and grain. Fences, wire, in good condition. House, 14 rooms, furnace, bath, hot and cold water, lavatory, sewer, city water. Barns, 36x60; horse barn, 30x60, with ell, 30x40, concrete floor; all buildings, in fine condition. Watered, house and barns, by city water; fields, by well and windmill. $\frac{1}{8}$ mile from Deer River. Good location for milk route. Unoccupied. Will leave farm tools. Price, \$8,000. Terms, \$5,000 cash, balance at 5%. Address J. H. McLearn, agent, Gouverneur, N. Y.

*No. 464—Farm of 276 acres, located $1\frac{1}{4}$ miles from Copenhagen P. O.; $1\frac{1}{4}$ miles from railway station at Copenhagen, on line of C. & C. R. R.; $1\frac{1}{4}$ miles from butter factory, cheese factory and milk station. Highways, good. Nearest village, Copenhagen, population 1000, $1\frac{1}{4}$ miles distant, reached by highway. Surface of farm, rolling. Soil, loam. All tillable. Best adapted to timothy, clover, oats and grain. Fences, good. House, good size, in first-class condition. Large barn, in excellent condition. Watered, house and barns, by well; fields, by springs. Near Deer River. Farm will keep 50 cows. Occupied by owner. Will leave 30 cows, hay, straw, fodder and part of grain. Reason for selling, owner wishes to retire. Price, \$15,500. Terms, \$5,000 cash, balance at 5%. Address J. H. McLearn, agent, Gouverneur, N. Y.

TOWN OF DIANA

Population 2,279

*No. 465—Farm of 120 acres located $\frac{1}{2}$ mile from Sterlingbush P. O.

* Farm is in hands of agent or real estate dealer.

and railway station, on line of N. Y. C. R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from churches; $\frac{3}{4}$ mile from milk station and cheese factory. Highways, good. Nearest village, Carthage, population 6,000, 15 miles distant, reached by highway. Surface, level. Soil, light, mucky loam. Acres in meadow, 75; in natural pasture, 45; in timber, 8; acres tillable, 90. Best adapted to corn, hay, grain, etc. Good fences. 8-room house, with woodshed, in good condition. Watered, house and barns by well. Barns in good condition. Indian River borders back end of farm. Occupied by owner. Reason for selling, old age of owner. Price includes dairy. Price, \$3,000. Terms, \$700 down, or house taken in part payment. Address J. H. McLearn, agent, Gouverneur, N. Y.

TOWN OF HARRISBURG

Population 686

*No. 466—Farm of 135 acres, located 7 miles from Copenhagen P. O. 7 miles from railway station at Copenhagen, on line of C. & C. R.; 1 mile from school, Catholic and Protestant churches, butter factory and cheese factory; 7 miles from milk station. Highways, good. Nearest village, Copenhagen, population 1,000, 7 miles distant, reached by highway. Surface of farm, rolling. Altitude, 1,500 feet. Soil, clay loam. Acres in meadow, 60; all tillable. Fruit, several apple trees. Best adapted to timothy, clover, corn, wheat and oats. House, 7 rooms, in good repair, Cow barn, 42x54, in good condition. Watered, house, by well and cistern in cellar; barn, by well; fields, by 2 springs. Unoccupied. Reason for selling, owner has other business. Price, \$3,000. Terms, \$500 cash, balance at 5%. Address J. H. McLearn, agent, Gouverneur, N. Y.

*No. 467—Farm of 130 acres, located 6 miles from Lowville P. O., R. D. 4 and railway station, on line of N. Y. C. R. R.; 1 mile from school, churches and cheese factory; 6 miles from milk station. Highways, good, part State road. Surface of farm level and rolling. Altitude about 1,000 ft. Soil, clay loam. Acres in meadow, 50; in natural pasture, 60; in timber, 10, mostly hard wood. Acres tillable, 120. Fruit, apples. Best adapted to grain,

hay, corn and potatoes. Fences in good condition. House, 9 rooms, good condition. Outbuildings: good barn, 80x44, and barn, 26x40. Watered, house, by well; barn, by running water. Occupied by owner. Price, \$6,500. Terms, $\frac{1}{2}$ cash, balance on mortgage at 5%. 14 cows, 1 bull, 2 heifers, 3 calves, all farm tools, hay and grain included in above price. Address Henry E. Weber, agent, Weber Block, Lowville, N. Y.

*No. 468—Farm of 112 acres, located 7 miles from Lowville P. O., R. D. 2, and railway station, on line of N. Y. C. R. R.; 1 mile from school and churches; 2 miles from butter factory and cheese factory; 7 miles from milk station and milk condensing plant. Highways, part State road. Surface of farm rolling. Altitude about 1,000 ft. Soil, clay loam. Acres in meadow, 42; in natural pasture, 50; in timber, 20, spruce, hemlock, basswood, maple, birch and beech. Acres tillable, 90. Fruit, apples. Adapted to grain, hay, corn, potatoes, etc. Fences in good condition. House, 6 rooms, good condition. Outbuildings: good barn, 30x40, with basement. Watered, house and barn, by running water, fields, by creek. Occupied by owner. Reason for selling, death of owner's wife. Price, \$3,500. Terms, \$500 cash, balance on bond and mortgage at 5%. Address Henry F. Weber, agent, Weber Block, Lowville, N. Y.

TOWN OF LOWVILLE

Population 3,875

*No. 469—Farm of 112 acres, located $1\frac{1}{2}$ miles from Lowville P. O.; $1\frac{1}{2}$ miles from railway station at Lowville, on line of N. Y. C. & H. R. R. R.; $1\frac{1}{2}$ miles from Lowville Academy, and other schools; $1\frac{1}{2}$ miles from churches of all denominations, butter factory, cheese factory, milk station and condensing plant. Highways, good. Nearest village, Lowville, population 4,000, $1\frac{1}{2}$ miles distant, reached by highway. Surface of farm, slightly rolling, mostly level. Altitude, 800 feet. Soil, loam on top of lime rock. Acres in meadow, 40; in natural pasture, 50; acres tillable, 100. Adapted to general farming. Fences, good. House, 6 rooms, in good condition. Barn, large, in good condition. Watered, house, by well; barns, by running water; fields, by running water. 2 miles from Black river. 20

* Farm is in hands of agent or real estate dealer.

first-class cows, some calves, hay and grain go with farm at price given. Reason for selling, owner is a widow and a non-resident. Price, \$6,500. Terms, $\frac{1}{2}$ cash, balance at 5%. Address Henry F. Weber, agent, Weber Block, Lowville, N. Y.

*No. 470—Farm of $47\frac{1}{2}$ acres, located 3 miles from Lowville P. O., R. D. 5 and railway station, on line of N. Y. C. R. R.; $\frac{1}{2}$ mile from school and churches. Surface of farm rolling. Altitude about 1,000 ft. Soil, clay loam. Acres in meadow 20, in natural pasture 2, in timber $7\frac{1}{2}$, mostly hard wood. Acres tillable 40. Fruit, apples etc. Fences in good condition. House, 7 rooms, good condition. Outbuildings, barn 40×35 , also horse barn, good condition. Watered, house by well, barn by running water. Occupied by owner. Reason for selling, owner a widow. Price \$3,000. Terms \$1,000 cash, balance on long time at 5%. 3 cows, double wagon, hay, straw, reaper, harrow, mowing machine, horse rake, etc., included in above price. Address Henry F. Weber, agent, Weber Block, Lowville, N. Y.

TOWN OF NEW BREMEN

Population 1,609

No. 471—Farm of 280 acres, located 1 mile from Beaver Falls P. O., and railway station at Beaver Falls, on line of Lowville and Beaver River R. R.; 1 mile from school, church and milk station. Highways, good. Nearest large village, Lowville, population 4,000, 8 miles distant, reached by rail and highway. Surface of farm, level and rolling. Soil, sandy. Acres in meadow, 40; in natural pasture, 40; in timber, 200. Best adapted to potatoes, grain, fruit and berries. Fences, wire and post. Watered by small creek. Beaver River, $\frac{1}{2}$ mile from farm. Unoccupied. Price, \$2,000. Terms, to suit purchaser. Address Clara S. Itterly, Irvington, N. Y., Box 66.

TOWN OF OSCEOLA

Population 456

No. 472—Farm of 182 acres, located 1 mile from Osceola P. O., 12 miles from railway station at Camden, on line of A. W. & O. Ry., 1 mile from school, churches and cheese factory. Highways somewhat hilly but good. Surface of farm rolling. Altitude about 1,100 ft.

Soil, gravelly loam. Acres in meadow 50, in natural pasture 80, in timber 50, mostly second growth, hard wood. All tillable except wood land. Fruit, about 70 apple trees. Best adapted to corn, oats, barley and grasses. Fences, board and wire, fair condition. House, $11\frac{1}{2}$ stories, 18×24 , wing 18×30 and shed 10×38 , fair condition. Outbuildings, one barn 40×80 , $\frac{1}{2}$ basement, barn 36×40 with cellar, stone smoke and ash house. Watered by springs and brook. Occupied by owner. Reason for selling, owner has other business. Price \$2,500. Terms, $\frac{1}{2}$ cash, balance on easy terms. Daily mail and stage. Address O. G. Cowles, Osceola, N. Y. Owner will rent for cash or on shares.

TOWN OF PICKNEY

Population 806

*No. 473—Farm of 82 acres; located 2 miles from Barnes Corners P. O.; $7\frac{1}{2}$ miles from railway station at Copenhagen, on line of C. & C. R. R.; 1 mile from school; 2 miles from Catholic and Protestant churches; $1\frac{1}{2}$ miles from butter factory, and cheese factory. Highways, good. Nearest village, Copenhagen, population 1000, $7\frac{1}{2}$ miles distant, reached by highway. Surface of farm, rolling. Altitude, 1,500 feet. Soil, clay loam. Acres in meadow, 50; in timber, 20, maple and beech; all tillable, except woodland. Fruit, a few apple trees. Best adapted to corn, oats, wheat, fruit, timothy, clover. House, 8 rooms, in good condition. Barns, in good condition. Watered, house by well, and good spring in cellar; barns, by 2 wells; fields, by several springs. Occupied by owner. Reason for selling, ill health of owner. Price, \$2,500. Address J. H. McLearn, agent, Gouverneur, N. Y.

TOWN OF TURIN

Population 1,030

No. 474—Farm of 325 acres, located $2\frac{1}{2}$ miles from P. O.; 2 miles from railway station at Houseville, on line of Glenfield and Western R. R.; 1 mile from school and cheese factory; $\frac{1}{2}$ mile from churches; 5 miles from milk station; $3\frac{1}{2}$ miles from butter factory. Highways, in good condition. Nearest large village, Lowville, 10 miles distant, reached by rail and highway. Surface, mostly level, somewhat rolling to south and east. Altitude, about 1,200 feet. Soil, clay loam. Acres in meadow, 100; in timber, 80, mostly hard wood.

* Farm is in hands of agent or real estate dealer.

Acres tillable, 150. Fruit, about 10 apple trees. Best adapted to grass, potatoes, barley and oats. Fences, barbed wire and rail. House, 22x24, new. Outbuildings, 2 barns, 30x40, one in good condition, the other needing some repairs. Watered, house and barn, by well; fields, by springs and streams. This farm has carried a dairy of 35 cows, besides young stock and teams. Sugar bush on place. Good spring across road from house. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$15 per acre. Address J. Lucius Seymour, Lyons Falls, N. Y.

TOWN OF WATSON

Population 757

No. 475—Farm of 147 acres, 1 mile from Bushes Landing P. O.; 4 miles from Martinsburg railroad station, on line of N. Y. C., Black River branch; R. D. 1, from Glenfield; ½ mile from

cheese factory. Highways, good. Soil, clay loam, good quality. Acres in meadow, about 40; acres natural pasture, 50; acres timber, 60, maple, birch, cedar, ash, hemlock and poplar. About 50 different varieties of fruit trees. Best adapted to dairying. Fences, rail and wire, in good condition. 2-story house, 12 rooms, in good condition. 2 barns: one, 30x50; one, 26x62, with stone basement, in good condition. Watered by well, spring and creek. Good hunting and fishing. Deer hunting within 7 miles. This farm is 4 miles from Chase Lake and 5½ miles from Lowville. About 5 minutes' walk to school. ½ mile from Black River. The timber will pay for farm. Fine trout stream running through farm. There is a blacksmith shop and milk house on farm. Price, \$4,000, including all farming tools. Terms, ½ cash. Name and address of owner, J. L. Gazin, Glenfield, N. Y., R. D. 1.

LIVINGSTON COUNTY

Area, 644 square miles. Population, 38,037. Annual precipitation, 36.48 inches. Annual mean temperature, 50°. Number of farms, 3,298. County seat, Geneseo.

This county is situated in the western part of the state and is intersected by the Genesee River, and is also drained by the Canaseraga and Honeoye creeks. The surface features show the eastern part of the county to be quite rough and the southern part generally hilly. The fertile Genesee Valley extends the entire length of the county from the north to south. It is extensively covered with forests. Two large lakes lie in the eastern part of the county. The soil in the southern part is generally sandy loam, while near the center clay is predominant. Numerous salt wells are found in the northern part of the county and have been developed into a great industry. The county leads every other county of the state in the production of rock salt. The total valuation of all farm property is \$28,698,858, an increase of 32 per cent. over the valuation of 1900. The average price of farm land per acre is \$39.40, a gain of about \$5 per acre during the past decade. The domestic animals reported on the farms: Dairy cows, 17,859; horses, 13,598; swine, 13,231; sheep, 59,794; poultry, 166,149; milk product, 9,161,667 gallons, and the receipts from all dairy products \$787,866. There are fifteen milk stations and factories in the county. Some of the leading crops grown are corn, 346,213 bushels; oats, 960,346 bushels; wheat, 520,775 bushels; barley, 58,656 bushels; rye, 69,797 bushels; dry beans, 255,244 bushels; potatoes, 1,438,699 bushels; hay and forage, 120,272 tons. The county is intersected by the Delaware, Lackawanna and Western; Erie and Pennsylvania railroads and Genesee Valley Canal. These lines furnish excellent accommodations to the farmers in the marketing of their products. Buffalo, Rochester, Elmira and other centers of population furnish unlimited markets for all farm products. Mineral springs of great value and popularity are located at Avon, a state normal school at Geneseo, and planing mills, salt works, flour and saw mills are located throughout the county. There are 174 district schools, 12 granges, 1 Pomona grange and a Union Agricultural Society, all devoted to the best interests of the farmers of the county. Vineyards and orchards are being developed with great success.

TOWN OF MT. MORRIS

Population 4,004

No. 476—Farm of 120 acres, 3 miles from Tuscarora P. O. and railway station; ½ mile from school. Soil, grav-

elly loam. There is an abundance of all kinds of fruit, nursery stock is grown as a side line. Farm is in a high state of cultivation and produces good crops of all kinds of grain, hay and alfalfa. Frame house, 2 stories, 5 rooms on first

floor, with chambers on second floor, 2 cellars, all in good condition. Barn, 28x140, combining stables, granary, hay mows. Watered by 3 wells and numerous springs. Fences, wire; 1,000 rods of pig fence. There are 10 acres of alfalfa seeded and the land is well adapted to its growth. Easy access over good roads to three railroads. Also new improved road in process of construction. Price, \$70 per acre. Terms, $\frac{1}{2}$ cash, balance on time. Address L. H. Walker, Mt. Morris, N. Y.

TOWN OF OSSIAN

Population 730

No. 477—Farm of 136 acres, located 4 miles from Canaseraga P. O. R. D. No. 3 and railway station, on line of Erie & Shawmut Ry., $\frac{1}{4}$ mile from school and church, cheese factory on farm, 4 miles from milk station. Highways good. Nearest large village, Dansville, 6 miles distant, population about 5,000, reached by highway. Surface of farm mostly level. Altitude about 1,500 ft. Acres in meadow 50, in natural pasture 20, in timber 30, oak and chestnut. Acres tillable 100. Fruit, about 100 apple trees, also large number of young trees of all kinds. Best adapted to potatoes, wheat and corn. No fences except around pasture. House, large, first-

class condition. Outbuildings, barn 40x80, cow barn 50x60, two silos, horse barn 25x44, hog pen, chicken house, garage and ice house, first-class condition. Watered, house and barn, by well and windmill, fields by spring. Occupied by owner. Reason for selling, scarcity of help. Price \$12,000. Terms, \$3,000 down, balance on time. Address F. H. LaMonte, Dansville, N. Y., R. D. No. 3.

No. 478—Farm of 250 acres, located 6 miles from Canaseraga P. O. R. D. No. 3 and railway station, on line of Erie & Shawmut Ry., $\frac{1}{4}$ mile from school, 2 miles from Protestant Church, 2 miles from cheese factory, 6 miles from milk station. Highways good. Nearest large village, Dansville, 8 miles distant, population about 5,000, reached by highway. Surface of farm rolling. Altitude about 1,700 ft. Soil, gravel. Acres in meadow 45, in natural pasture 80, in timber 40, chestnut, maple and beech. Acres tillable, about 150. Very little fruit. Best adapted to oats, hay, beans and potatoes. Fences fairly good. House, large, good condition. Outbuildings, ample for size of farm. Watered by springs. Occupied by tenant. Reason for selling, scarcity of help. Price \$35 per acre. Terms, part cash, remainder on time. Address Mrs. F. Hampton, Dansville, N. Y.

MADISON COUNTY

Area, 628 square miles. Population, 39,289. Annual precipitation, 48.5 inches. Annual mean temperature, 45.6°. Number of farms, 4,042. County seat, Wampsville.

This county is located in the central part of the state, touched on the north by Oneida Lake, and Oneida Creek forms its northeast boundary. It is drained by Chenango and Unadilla Rivers and Chittenango, Canastota and Oriskany Creeks. This county is one of the leading counties for grazing and stock raising. It is fertile and productive and easily accessible to the best markets. The farms offer excellent opportunities and give good returns for intelligent effort. In the southern part the surface is mostly hilly, traversed by broad valleys, while in the northern part gentle undulations and stretches of level land prevail. The county is well wooded and has an abundance of pure water. The rocks which underlie are sandstone and shale. The county has quarries of gypsum, water lime, iron ore and excellent building stone. In the western part gravelly loam is prevalent, while in the southern section volusia silt loam predominates. The soil in the northern portion is usually rich, black and gravelly loam whereon are produced enormous crops of celery, onions, etc. The leading crops are corn, 212,790 bushels; oats, 712,637 bushels; barley, 66,006 bushels; buckwheat, 111,431 bushels; potatoes, 619,283 bushels; hops, 1,384,508 pounds; hay and forage, 238,578 tons. Alfalfa grows abundantly in the county. The average price of farm land per acre is \$41.45. Domestic animals are reported as follows: Dairy cows, 36,994; horses, 11,282; swine, 7,750; sheep, 7,602; poultry, 211,716. There were produced 22,381,370 gallons of milk, and the total receipts from the sale of dairy products were \$2,247,721. Live stock represents 21 per cent. of the entire value of farm property in the county, making it rank third in this industry. The county is intersected by the New York Central and Hudson River; New York, Ontario and Western; West Shore; Delaware, Lackawanna and Western, and the Cortland and Northern railroads; the Erie canal also passes

through the northern portion. There are 199 school districts with high schools and academies in some of the larger villages. Colgate University is located at Hamilton and is one of the well-known universities of the east. At Morrisville is located one of the new agricultural schools which are contributing so much to the agricultural power and prosperity of the state. Flour mills, breweries, knitting mills, carriage factories and canning factories are located in this county. There are seventeen agricultural organizations, thirty-five miles of state and county roads, 1,273 miles of improved highways. The principal exports of the county are hops, dairy products and pure-bred cattle. The soil and climate is especially adapted for the production of apples of the highest quality and other fruits can be grown with excellent results.

TOWN OF BROOKFIELD

Population 2,403

*No. 479—Farm of 335 acres, located $\frac{1}{2}$ mile from Bridgewater P. O., and railway station, on line of D. L. & W. and U. V. R. R.; $\frac{1}{2}$ mile from school; 1 mile from churches. Highways, level and good. Nearest village, Bridgewater, population about 300. Surface, level, except pasture. Soil, mostly river bottom. Acres in meadow, 100; natural pasture, 80; timber, 15, all kinds; acres tillable, 200. Fruit, apples and pears. Best adapted to hay, grain, etc. Fences, board and wire, good. 3 good houses, 1 larger than the others. Outbuildings: barn, 135x40, for fancy horses; horse barn with enclosed sheds for work horses; cow barn with two silos, 110x40; other outbuildings. Watered by springs, streams and Unadilla river, which runs through farm, Occupied by tenant. Reason for selling, to close an estate. Race course on farm, which is within easy distance of Utica by State road or railroad. Price, \$22,000. Terms, reasonable. Address Clinton Noble, attorney, West Winfield, N. Y.

No. 480—Farm of 112 acres, situated 1 mile from North Brookfield P. O., and railway station on D., L. & W. R. R.; R. D. Soil, very productive and in a high state of cultivation. Acres tillable, 90; acres timber, 20. 500 sugar maple trees; 30 bearing apple trees. House, 10 rooms, 2 stories, in good repair. Modern barns with basement and cement floors. Watered by running springs and brook; concrete reservoir which holds 100 barrels is piped to house and barn. Well fenced. There are 3 acres of alfalfa 1 year old and 1 acre 2 years old from which owner had 3 crops this season. Schools, churches, stores, milk station at North Brookfield, 1 mile distant. Price, \$5,000. Terms, easy. Address W. T. Squires, North Brookfield, N. Y.

No. 481—Farm of 125 acres, situated $\frac{1}{4}$ mile from North Brookfield, on D. L. & W. R. R.; R. D. from North Brookfield. 90 acres tillable; 30 acres timber. Soil, very productive. Adapted to hops, stock raising, hay and grain. Good fences. Spring and brook water. Barn, 34x50, in good condition. No house. Large pond of pure spring water on farm from which \$400 to \$500 worth of ice is sold each year. Taxes in town of Brookfield very low. Price, \$5,000. Terms, easy. Address W. T. Squires, North Brookfield, N. Y.

No. 482—Farm of 96 acres, located $2\frac{1}{2}$ miles from Leonardsville, P. O.; $2\frac{1}{2}$ miles from railway station at Leonardsville, on line of Unadilla Valley R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from Baptist and Methodist churches; $2\frac{1}{2}$ miles from milk station; 14 miles from condensing plant. Highways, $\frac{1}{2}$ good, $\frac{1}{2}$ hilly. Nearest city, Utica, population 75,000, 25 miles distant, reached by rail or highway. Surface of farm, hilly, but good to work. Soil, part loam, part clay and gravel. Acres in meadow, 50; in natural pasture, 46; acres tillable, 75. Fruit, a few apple trees in bearing, 10 or 12 young trees. Best adapted to hay, oats, corn, potatoes, turnips and fruit. Fences, stone wall and wire, cedar posts, in good condition. House, upright, 20x24; wing, 16x18; back wing, 18x24. Barn, 24x54, with 12x54 leanto on south; grain silo, 14x24; milkhouse and icehouse. Watered, house, by well; barns, by spring; fields, by brook and pond. $1\frac{1}{2}$ miles from Unadilla river. Sufficient timber on ground to build an addition to barn, 24x28, and hay in stock to fill it. Occupied by tenant. Reason for selling, owner is unable to work farm. Price, \$2,800. Terms, $\frac{1}{2}$ cash, balance on bond and mortgage. Address Eli S. Brand, Leonardsville, N. Y. Owner will rent.

* Farm is in hands of agent or real estate dealer.

No. 483—Farm of 120 acres, located 2 miles from Brookfield P. O.; 3 miles from railway station at Brookfield, on line of D. L. & W. R. R.; 25 rods from school; 2 miles from churches; 2 miles from milk station; 3 miles from condensing plant. Highways, some hills, but good. Nearest village, Brookfield, population 450, 2 miles distant, reached by highway. Acres in meadow, 60; in natural pasture, 50; in timber, 10, hard wood and hemlock; acres tillable, 100. Plenty of fruit. Best adapted to hay, corn, oats, barley and hops. Fences, wire. House, $1\frac{1}{2}$ stories, 8 rooms, in good condition. Basement barn, 54x36; hophouse, 20x40; hogpen, 18x12; henhouse, 12x12. Watered, house by well; barns and fields, by running water. Occupied by owner. Reason for selling, advanced age of owner. Price, \$3,500. Terms, easy. Address D. E. Gray, Brookfield, Madison Co., N. Y. Owner will rent.

No. 484—Farm of 100 acres, located $2\frac{1}{2}$ miles from Brookfield P. O.; 3 miles from railway station at Brookfield, on line of D. L. & W. R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from churches of various denominations; $2\frac{1}{2}$ miles from cheese factory; 3 miles from milk station; 16 miles from condensing plant. Highways, good. Nearest city, Utica, population 75,000. Acres in meadow, 40; in natural pasture, 35; in timber, 25, hard wood and hemlock; acres tillable, 75. Fruit, apples and pears, good orchard. Adapted to all crops grown in this climate. Fences, mostly wire. House, good farmhouse, 8 rooms. Basement barn, 22x50; hophouse, 20x40; hogpen. Watered, house, by well; fields, by plenty of running water. 2 miles from small lake. One of the best hop farms in this locality. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$2,500. Terms, easy. Owner will rent for cash or on shares. Address D. E. Gray, Brookfield, Madison Co., N. Y.

TOWN OF CAZENOVIA

Population 3,687

No. 485—Farm of 51 acres, located $\frac{1}{2}$ mile from Cazenovia P. O., R. D. 3; $\frac{1}{2}$ mile from railway station at Cazenovia, on line of L. V. R. R.; $1\frac{1}{4}$ miles

from W. S. R. R.; $\frac{1}{2}$ mile from school, Methodist, Presbyterian, Baptist and Catholic churches, butter factory, cheese factory and milk station. Highways, good. Nearest village, Cazenovia, population 2,000, $\frac{1}{2}$ mile distant, reached by highway. Surface of farm, level and slightly rolling. Altitude, 1,500 feet. Soil, gravelly loam. Acres in meadow, 24; in timber, 4, second growth; acres tillable, 47. Fruit, new orchard, 150 apple trees, some old apple trees, pears, cherries and plums. Best adapted to hay, grain, cabbage, corn and all vegetables. Fences, wire and some rail, in good condition. 2 houses in good condition. 9 rooms, each. Both houses just painted, good hot air furnace in one house, good cellar for coal and vegetables; telephones in houses. Barns: 1 barn, 30x40; 1 barn, 20x60, new poultryhouse, open front, 24x30, another in process of erection. Watered, house, by fine well and cistern; barns, by well; fields, by 2 streams. $\frac{3}{4}$ mile from Cazenovia Lake. 3 acres of alfalfa on this farm. Occupied by owner. Reason for selling, owner wishes to move to California. Price, \$130 per acre. Terms, $\frac{1}{3}$ cash, balance on mortgage. Address Jos. E. Davis, Breezy Meadows, Cazenovia, N. Y.

TOWN OF DE RUYTER

Population 1,196

*No. 486—Farm of 153 acres. $1\frac{1}{2}$ miles from Sheds P. O. and station; school adjoins farm. Good dairy farm. Well watered. 2 barns, in good condition. House, 20x36, thoroughly repaired and painted. Grounds, well shaded with maples. Price, \$2,000. Terms, \$800 cash. Name and address of agent, Major A. Smith, De Ruyter, N. Y., R. D.

TOWN OF EATON

Population 2,417

No. 487—Farm of 200 acres; $2\frac{1}{2}$ miles from Eaton P. O.; 3 miles from Eaton station, on line of N. Y. O & W. R. R.; R. D. Highways in fair condition. Adapted to corn, potatoes, dairying and grain. Acres in meadow, 75; tillable, 150; 25 acres in timber; 250 sugar maples; 3 acres of bearing apples. Watered by well, springs and brooks. $1\frac{1}{2}$ -story house. Large barn, silo and other outbuildings. This farm borders on Bradley Brook reservoir and

* Farm is in hands of agent or real estate dealer.

is $\frac{1}{2}$ mile from Hatches Lake, which is a summer resort. Price, \$8,500. Terms, reasonable. Owner will rent on shares; will also hire young man with small family by the year. Address Lewis Hopkins, Lebanon, N. Y., R. D.

No. 488—Farm of 25 acres, located $\frac{3}{4}$ miles from West Eaton P. O.; $3\frac{1}{2}$ miles from railway station at Eaton, on line of N. Y. O. & W. R. R.; $\frac{3}{4}$ mile from churches; $3\frac{1}{2}$ miles from milk station. Highways, good. Nearest village, Morrisville, population, 800, $3\frac{1}{2}$ miles distant, reached by highway. This tract of land constitutes a muck farm, which, if drained, would become exceedingly valuable. The expense of draining it would not be excessive and the owner offers $\frac{1}{2}$ interest in the cleared and drained land to any person who will undertake the enterprise. It is estimated by experts that the expense of draining and ditching would amount to from \$300 to \$500 and the land when put in proper condition for the raising of the choicest vegetables, such as celery and lettuce, would be worth \$200 per acre. Reason for selling, advanced age of owner. Price, \$30 per acre. Terms, $\frac{1}{2}$ cash, balance on time. Address D. E. Darrow, West Eaton, N. Y., Lock Box, 1. Owner will rent.

TOWN OF FENNER

Population 807

No. 489—Farm of 80 acres, located 3 miles from Cazenovia P. O., R. D. 1; $\frac{3}{4}$ mile from railway station at Chittenango Falls, on line of L. V. R. R.; $\frac{1}{4}$ mile from school; $\frac{3}{4}$ mile from Methodist Episcopal church; $\frac{1}{4}$ mile from milk station. Highways, good, mostly macadamized. Nearest village, Cazenovia, population 2,000, 3 miles distant, reached by rail or highway. Surface of farm, mostly rolling. Altitude, 1,000 feet. Soil, gravel. Acres in meadow, 25; in natural pasture, 30; in timber, 6, mostly beech and maple; acres tillable, 70. Fruit, 50 apple trees, 25 plum trees, 6 cherry trees, 2 pear trees also $\frac{1}{2}$ acre of small fruits. Best adapted to fruit and dairying. Fences, mostly wire. House, 12 rooms, painted, with blinds. Barns: one, 30x40, with basement; one, 18x30; horse barn, 20x40, fitted with hay carrier and track. Watered, house and barns, by spring; fields, by 2 springs. Chittenango Creek

borders the west side of farm. 2 beds of black gravel, suitable for concrete work. Occupied by owner. Reason for selling, advanced age of owner. Price, \$3,200. Terms, $\frac{1}{2}$ cash, balance on time. Address H. O. Turner, Cazenovia, N. Y.

TOWN OF GEORGETOWN

Population 925

No. 490—Farm of 71 acres; 2 miles from Lebanon; 2 miles from Georgetown P. O.; 8 miles from Earlville; 3 miles from station on Chenango branch of N. Y. C. R. R.; $\frac{1}{4}$ mile from school; 2 miles from churches; R. D. 1 from Lebanon; 2 miles from butter and cheese factory; 2 miles from high school; 10 miles from Colgate College; $\frac{1}{4}$ mile from district school. Highways, good, partly State road. Nearest city, Syracuse, 34 miles distant. Rolling surface, southern slope. Soil loam, clay subsoil. Acres in meadow, 50; natural pasture, 20; timber, 10, maple and beech; acres tillable, 60. Fruit, 100 cherry trees, 50 grape hills, 50 apple trees, all in bearing. Best adapted to corn, oats, buckwheat, potatoes and grass. Fences, wire, in good condition. House, 5 rooms, in fair condition. House on telephone line. Barn, 24x36, with basement, in first-class condition. Watered, house and barn, by well; fields, by springs. Several small lakes and reservoirs from 2 to 5 miles distant from farm. This farm produced over \$400 worth of cherries this season; also 50 tons of hay. Reasons for selling, owner wants to retire. Price, \$30 per acre. Terms, $\frac{1}{2}$ down, balance to suit purchaser. Address L. A. Gustin, Lebanon, N. Y.

*No. 491—Farm of 100 acres, located 3 miles from Erieville P. O., R. D. 2 and railway station; on line of West Shore Branch R. R.; 10 rods from school; 3 miles from churches, butter factory and milk station. Highways good. Surface rolling. Soil, gravelly loam. Acres in meadow, 25; in natural pasture, 30; in timber, 15, beech, maple and hemlock. Acres tillable, 55. Best adapted to hay, corn, cabbage, potatoes, oats and buckwheat. Fences, mostly wire. House, good size, 2 stories, nearly new. Outbuildings: new

* Farm is in hands of agent or real estate dealer.

barn, 36x50, cement floor and basement; hen house and tool house. Watered by running springs. Reason for selling, death of owner's wife. Price, \$3,500. Terms, \$1,500 down, balance on time at 6%. Address E. S. Jillson, agent, Erieville, N. Y.

TOWN OF HAMILTON

Population 3,825

*No. 492—Farm of 61 $\frac{3}{4}$ acres, located 2 miles from Poolville P. O., R. D. 1; 2 miles from railway station at Poolville, on line of D. L. & W. R. R.; $\frac{1}{2}$ mile from school; 1 mile from Baptist church, 2 miles from Methodist church; 1 mile from cheese factory; 2 miles from milk station; 5 miles from condensing plant. Highways, good dirt roads, somewhat hilly. Nearest large village, Norwich, 18 miles distant; and nearest city, Utica, population 75,000, 35 miles distant; both places reached by rail. Surface of farm, sloping to south and east. Soil, volusia silt loam. Acres in meadow, 35; in natural pasture, 15; in timber, 10, hard wood, second growth; acres tillable, 45. Best adapted to hops, corn, dairying, sheep, oats, potatoes, hay, peas. Fences, board and wire, in fair condition. House, 9 rooms, 2 stories, needs painting, otherwise in good condition. Barns; new horse barn, 20x36; cow barn, 30x40, old and in need of repairs; new henhouse. Watered, house, by well under house; barns by water piped to cow barn; fields by brook. Occupied by owner. Price, \$2,000. Terms, $\frac{1}{2}$ cash, balance on bond and mortgage. Address Smith Real Estate Agency, Hamilton, N. Y.

*No. 493—Farm of 96 acres, located at edge of village of Hamilton, R. D. 3; 1 mile from railway station at Hamilton; on line of N. Y. O. & W. R. R.; $\frac{1}{2}$ mile from school, Catholic and Protestant churches, cheese factory and milk station; 7 miles from milk condensing plant. Highways in excellent condition. Nearest city, Utica, 29 miles distant, population about 75,000, reached by rail and highway. Surface, some hilly, some level and some rolling. Soil, Volusia loam, Volusia silt loam and Dunkirk gravelly loam. Acres in meadow; 17; in natural pasture, 35; in timber, 3; mostly maple. Acres tillable, 86. Fruit, 11 acres of apples.

Best adapted to oats, corn, peas, hops, wheat and potatoes. Fences, barbed and American wire, mostly good. House, 45x35, good condition. Outbuildings: cow barn and horse barn, 32x60; silo, 18x18, attached; corn house, 12x15; hop kiln, 40x20; hen house, 18x12; hog house, 12x14; milk house and shed, new in 1910; all in good condition. Watered, house, by well and cistern, barn, by running water. Occupied by owner. Price, \$9,000. Terms, cash. Address Smith Real Estate Agency, Hamilton, N. Y.

*No. 494—Farm of 107 acres; located at South Hamilton; 3 miles from railway station at Poolville; on line of D. L. & W. R. R.; 1 mile from school, Baptist church and cheese factory; 3 miles from milk station; 6 miles from milk condensing plant. Surface of farm, rolling; small portion, rough. Acres in timber, 10, hemlock, beech, birch, one acre of sugar bush. Fruit, apples, pears and cherries. Fences, mostly barbed wire, good. House, nearly new, 11 rooms. Outbuildings: 4 barns; hay and cattle barn, 22x26; horse barn, 20x24; cow barn, with stanchions for 18 head of cattle, 26x36; silo and small woodhouse. Watered by well and springs. Occupied by tenant. Price, \$2,000. Terms, $\frac{1}{2}$ cash. Address Smith Real Estate Agency, Hamilton, N. Y.

No. 495—Small country place of about 2 acres, located at Hamilton Center; 1 mile from Poolville. House, 8 rooms, fair condition. Barn in good condition, also hen house. Fruit, 25 young fruit trees, nearly ready to bear, 6 or 8 older trees, 12 currant bushes, also raspberry and blackberry bushes. Price, \$400 cash or \$450 on time. Address D. Gazlay, Hamilton, N. Y.

*No. 496—Farm of 98 acres, located 2 miles from Hamilton P. O., R. D. 3; 1 mile from railway station at Poolville, on line of D. L. & W. R. R.; $\frac{1}{4}$ mile from school; 2 miles from Catholic and Protestant churches, 2 $\frac{1}{2}$ miles from cheese factory; 1 mile from milk station; 4 miles from milk condensing plant. Highways, good macadamized roads, somewhat hilly. Nearest city, Utica 29 miles distant, population about 75,000, reached by rail. Surface of farm, sloping to east. Altitude about

* Farm is in hands of agent or real estate dealer.

1,400 ft. Soil, Dunkirk clay, volusia loam and volusia silt loam. Acres in meadow, 60; in natural pasture, 35. About 80 acres tillable. Fruit, 45 apple trees. Fences, barbed wire, good. House, 14 rooms, 2 stories, good condition. Outbuildings: cow barn, 35x40, with wing for horse barn, 17x20, stanchions for 16 cows; barn, 19x35, with wing, 20x36, used for hen house, storage of wagons, tools, etc. Milk house with running water and ice house. Watered, house, by running spring; barns, by running spring; fields, by spring and brook. Occupied by owner. Reason for selling, owner wishes to retire from business. Price, \$5,000 including stock, tools and machinery. Terms, cash. Address Smith Real Estate Agency, Hamilton, N. Y.

*No. 497—Farm of 44 acres, located 1 mile from Hamilton P. O., R. D. 2; 1½ miles from railway station at Hamilton, on line of O. & W. R. R.; 4 miles from railway station at Hubbardsville, on line of D. L. & W. R. R.; ½ mile from school; 1 mile from Catholic, Baptist, Congregational, Methodist and Episcopal churches; 1½ miles from milk station; 8½ miles from condensing plant. Highways, hilly but good. Nearest city, Utica, population 75,000, 29 miles distant, reached by rail or highway. Surface, rolling, 5 acres level, 20 acres cradle knolls. Altitude, 1,400 feet. Soil, volusia silt loam, not very stony. Acres in meadow, 10; in natural pasture, 34; in timber, 10, basswood, maple, cherry, some young lumber; acres tillable, 20. Fruit, wild apple trees. Best adapted to oats, hay, buckwheat, potatoes, forage crops, hops. Well adapted to grazing and stock raising. Fences, barbed wire, in good condition. Hop kiln, 18x30 feet, poor condition. Watered, stock, by water trough; barns and fields, by springs. ¾ mile from Lake Moraine. Farm has wintered 12 cattle. Occupied by owner. Reason for selling, owner has more land than he can handle. Price, \$25 per acre. Terms, cash. Address Smith Real Estate Agency, Hamilton, N. Y.

* No. 498—Farm of 110 acres, located 1½ miles from Hamilton P. O., R. D. 2; 2 miles from railway station at Hamilton, on line of N. Y. O. & W. R. R.; 1 mile from school; 2 miles from Con-

gregational, Baptist, Methodist, Episcopal and Catholic churches; 2 miles from milk station. Highways, hilly. Nearest city, Utica, population, 75,000, 29 miles distant, reached by rail. Surface of farm, rolling. Altitude, 1,600 feet. Soil, volusia silt loam. Acres in meadow, 40; in natural pasture, 30; in timber, 15; hemlock, small; acres tillable, 90. Fruit, 4 choice varieties of apple trees, 100 cider apple trees. Best adapted to oats, hay, corn, potatoes, peas, hops, dairying, sheep. Fences, barbed wire and woven wire, in good condition. House, 30x40, in fair condition. Cow barn, 45x60, horse barn, 18x36, both in good condition. Watered, house and barns, by running water from spring; fields, by 2 springs. Occupied by owner. Reason for selling, wife of owner is dead. Price, \$2,500. Address Smith Real Estate Agency, Hamilton, N. Y.

No. 499—Farm of 132 acres, 1½ miles from South Hamilton P. O., on line of D. L. & W. R. R.; 4 miles from station; 1 mile from school; 1½ miles from church and butter and cheese factory. Highways, hilly but in good condition. Occupied by owner. Surface, ½ level, the remainder moderately hilly. Soil, good black soil. Acres in meadow, 50; natural pasture, 42; timber, 40, beech, maple and hemlock; part of the woodland contains three or four thousand young maple trees; acres tillable, 100. Fruit, 30 apple trees, some cherry and plum trees. Best adapted to hay, oats, corn and potatoes. Fences, wire, in good condition. House, 12 rooms, in good condition. Barns: basement cow barns, 30x40, in good condition; horse barn, 26x32, new; henhouse, new. Watered, house, by good well; barns and fields, by stream and springs; a fine creek running the entire length of farm, good fishing. Reason for selling, poor health of owner. Price, \$3,000. Terms, part cash, remainder to suit purchaser. Address E. E. Beekman, South Hamilton, N. Y.

TOWN OF LEBANON

Population 1,079

* No. 500—Farm of 120 acres, located 3 miles from Hamilton P. O.; ¼ mile from railway station at Randallville, on line of N. Y., O. & W. Ry.; 1½ miles from school; 3 miles from Prot-

* Farm is in hands of agent or real estate dealer.

estant and Catholic churches; $\frac{1}{4}$ mile from cheese factory and milk station; 5 miles from milk condensing plant. Highways, excellent dirt roads. Nearest city, Utica, 30 miles distant, population 75,000, reached by rail and highway. Surface of farm level. Altitude about 1,125 feet. Soil, Dunkirk gravelly loam. Acres in meadow 50, in natural pasture, 30, in timber, 2, maple and elm. Acres tillable, 110. Fruit, apples, cherries, plums and pears. Adapted to all crops grown in this section. Fence, barbed and woven wire, excellent condition. House, 38x38, 2 stories, excellent condition. Outbuildings: horse barn, 20x83; cow barn, 30x69; hay barn, 40x71; corn house, 21 feet square; hog pen, 16x30; ice house, 21x19; well house, 10x11; milk house, 6x8. Watered, house by well; barns by running water from windmill. The head waters of Chenango river on both sides of farm, one branch running through pasture at lower end. Occupied by owner. Reason for selling, owner has other business. Price, \$12,000. Terms, \$5,000 cash, balance on mortgage. Address Smith Real Estate Agency, Hamilton, N. Y.

No. 501—Farm of 234 acres, located 3 miles from Lebanon P. O., R. D. 2, and railway station, on line of N. Y. O. & W. R. R.; 3 miles from school, churches and milk station. Highways, good. Nearest village, Hamilton, population 1,800, 6 miles distant, reached by highway. Surface, nearly level. Soil, clay loam. Acres in meadow, 100; in natural pasture, 100; in timber, 34, maple and beech; acres tillable, 185; 200 apple trees. Best adapted to grass, oats, buckwheat and barley. Fences, wire and rail. House, small, in fair condition. Barn, 40x50, medium condition. Watered, house, by spring; barn and fields, by running water. Occupied by owner. Reason for selling, old age of owner. Price, \$25 per acre. Terms, \$500 cash, balance at \$500 per year. Address O. Beebe, Lebanon, Madison Co., N. Y., R. D. 2. Owner will rent.

No. 502—Farm of 242 acres, located 3 miles from Earlville P. O. and railway station, on line of O. & W. and D. L. & W. R. R.; $\frac{1}{4}$ mile from school; 3 miles from churches, milk station and condensing plant. Gravel highways. Nearest village, Earlville, population

1,000, 3 miles distant, reached by highway. Surface, mostly level, slightly rolling in places. Soil, dark loam. Acres in meadow, 150; in natural pasture, 100; in timber, 40; acres tillable, 200. Best adapted to corn, wheat, oats, potatoes and cabbage. Fences, wire, in good condition. House, 20x30, wing, 20x40. Cow barn, 106x30, cement stable, cement milkhouse, grainhouse and hoghouse. All buildings on farm are most modern in this section for dairying purposes. Watered, house, by well; barns, by running spring; fields, by brook. Reason for selling, owner has other business. Price, \$12,000. Reasonable mortgage may remain on farm. Address A. C. Fay, Earlville, Madison Co., N. Y.

No. 503—Farm of 200 acres, situated $1\frac{1}{2}$ miles from Lebanon P. O. and railway station, on line of W. S. R. R., Syracuse to Earlville branch; R. D. 2 from Lebanon. Highways, good. Acres in meadow, 70; acres in timber, between 40 and 50, mostly sugar maple, some beech and basswood. Fruit, pears, cherries, plums and apples. Best adapted to oats, corn, barley, buckwheat, peas, potatoes, timothy, clover and alfalfa. Fences, board, woven wire and barbed wire. House, 30x40, with wing, 2 stories, in good condition. Barns: one, 40x111, with 25-foot posts; an icehouse; milk-room; a little house for hired man; a new silo; all in good condition. Watered, house, by well, pump inside; barns, spring water, inside; fields, by springs and streams. Occupied. Reason for selling, advanced age of owner. Price includes some tools, wagons, machinery, etc. Price, \$8,000. Terms, $\frac{1}{3}$, $\frac{1}{2}$ or $\frac{2}{3}$ down, balance on mortgage at 5%. Name and address of owner, John Fisk, Lebanon, N. Y.

TOWN OF LENOX

Population 4,851

No. 504—Farm of 77 acres, located 4 miles from Canastota P. O., R. D. 7; 2 miles from railway station at South Bay, on line of L. V. R. R.; 1 mile from school and churches; 2 miles from milk station; 4 miles from condensing plant. Highways, good. Surface level. Nearest village, Oneida, population 8,000, about 5 miles distant, reached by highway. Soil, Dunkirk sand loam. Acres in meadow, 20; in natural pasture, 27; acres tillable, 50. 20 apple and 12 cherry trees. Best adapted to

hay, grain and all general crops. Fences, wire, in fair condition. House, 9 rooms, nearly new. Barn, room for 8 cows and 2 horses; good henhouse, pigpen, cornhouse and wagonshed. Watered, house and barn, by wells; fields, by never-failing spring. Oneida Lake 2 miles distant. 6 acres of fine winter wheat on farm. Occupied by owner. Reason for selling, owner has another farm. Price, \$2,500. Terms, \$1,000 cash, balance on long time. Address David K. Eames, Canastota, N. Y., R. D. 7.

*No. 505—Farm of 161 acres, located $3\frac{1}{2}$ miles from Canastota; from 2 to $3\frac{1}{2}$ miles from 4 railroad stations, on line of L. V. R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ and 3 miles from churches; $1\frac{1}{2}$ miles from milk station; 3 miles from milk condensing plant. Highway, good, State road. Nearest large villages, Canastota, population 3,500, $3\frac{1}{2}$ miles distant, reached by highway; Oneida, population 8,000, 6 miles distant, reached by rail. Surface of farm, mostly level. Soil, limestone loam, excellent alfalfa land. Acres in meadow, 80; 40 acres in alfalfa, balance in pasture; acres in timber, 6; acres tillable, 150. Fruit, orchard of apples, also pears, plums and cherries, young bearing trees. Best adapted to all general crops grown in central New York. Fences, stone, wire and post. House, large, upright and wing, about 15 rooms, 2 cellars, good condition. Also tenant house. Outbuildings: barn, 34×110 , with basement; stanchions for 40 cows; cow barn, 35×40 , with stanchions; horse and carriage house, hop house with two kilns, two hen and hog houses. Watered, house and barns, by running water; fields by springs and streams. Cazenovia and Oneida Lakes near. Occupied by owner. Reason for selling, advanced age of owner. Stock and tools can be purchased at a reasonable price. Price, \$12,000. Terms, \$4,000 down, balance on mortgage at 5%. Address Chas. S. Hutchinson, agent, 107 W. Kennedy Street, Syracuse, N. Y.

TOWN OF MADISON

Population 1,926

*No. 506—Farm of 210 acres, located $1\frac{1}{2}$ miles from North Brookfield P. O.; on line of D. L. & W. R. R.; about 2

miles from Hubbardsville Village and railroad station; R. D. from Hubbardsville. Highways, good. Occupied by tenant. Surface, mostly level. Soil, good. Adapted to hop raising and dairying. Fences, fair. House, 2 stories, with addition. Outbuildings, 3 barns and hophouse. Reason for selling, owner cannot attend to farm. Price, \$7,500. Terms, reasonable. Address John D. Collins, agent, Devereux Block, Utica, N. Y.

*No. 507—Farm of 179 acres, located $1\frac{1}{2}$ miles from Hamilton P. O., R. D. 1; 2 miles from railway station at Hamilton, on line of N. Y. O. & W. R. R.; school next to farm; $1\frac{1}{2}$ miles from Catholic and Protestant churches; 2 miles from cheese factory and milk station; 9 miles from milk condensing plant. Highways mostly level. Nearest city, Utica, 29 miles distant, population about 75,000, reached by rail and highway. Surface of farm, level and rolling. Altitude about 1,250 feet. Soil, volusia loam, free from stone. Acres in meadow, 45; in natural pasture, 60; in timber, 25, maple, beech and hemlock. Acres tillable, 150. Fruit, apples, plums and pears. Best adapted to potatoes, oats, corn, wheat, etc. Fences, barbed wire, cedar posts, good condition. House, 14 rooms, large wood house and store room. Outbuildings: horse barn, 30×50 , with 20×24 hog pen, leanto 12×20 ; granary, 20×20 attached; hop kiln, 40×20 , with 15×24 addition; cow barn, 80×32 , including two inside silos, 16 feet square by 26, addition 22×54 ; ice house, 16×24 ; hen house, 16×30 , excellent condition. Watered, house by well and cistern; barns by springs. Lake Moraine is $\frac{1}{4}$ mile distant and can be seen from farm. Occupied by owner. Reason for selling, illness in family. Price, \$8,000. Address Smith Real Estate Agency, Hamilton, N. Y.

TOWN OF NELSON

Population 1,136

No. 508—Farm of 86 acres, 3 miles from Erieville P. O. and railway station, on line of W. S. R. R.; $\frac{1}{8}$ mile from school; 3 miles from churches; R. D. 2 from Erieville; 3 miles from milk station, butter factory and cheese factory. Highways, good. 5 miles from Cazenovia, population 1,800. Occupied by tenant. Surface, part hilly and part

* Farm is in hands of agent or real estate dealer.

level. Soil, gravelly loam. Acres tillable, 80. Fruit, 20 apple trees, 3 pear and 6 plum trees. Best adapted to grass, grain, corn and potatoes. Fences, wire and cedar, in fair condition. House, 8 rooms. Barn, 36x56, with basement, stable for 20 head of cattle. Watered, house by well and cistern; barn, by spring brook; fields, by spring. 5 miles from Cazenovia Lake. This farm is a good productive dairy or sheep farm, in good shape for both. Henhouse and silo join barn. Reason for selling, poor health of owner. Price, \$2,000. Terms, \$700 down, balance on mortgage. Address A. R. Warren, Cazenovia, N. Y.

No. 509—Farm of 300 acres, located 3 miles from Cazenovia P. O., R. D. 3; 2 miles from railway station at Balina, on line of Chenango branch of N. Y. C. R. R.; 1/16 mile from school; 2 miles from Methodist church; 1½ miles from butter factory and cheese factory; 2 miles from milk station. Highways, good. Nearest village, Cazenovia, population 1,800, 3 miles distant, reached by highway. Surface of farm, level. Altitude, 1,300 feet. Soil, good. Acres in meadow, 70; in natural pasture, 100; in timber, 32, 20 acres hard wood, 12 cedar swamp; acres tillable, 260. Fruit, 40 apple trees. Best adapted to oats, wheat, corn, barley, hay, rye and celery. Fences, wood and wire, in good condition. House, 7 rooms, in first-class condition. Barns, 40x80, basement with ell 36x42, with toolshed, 32x80, large silo; new horse stable for 6 horses, cement floors, in first-class condition. Watered, house, by hard and soft water, piped to house, never-failing; barns, by running water; fields, by running water. This is a fine dairy farm, easy to work, also very productive; near good markets for everything raised. 3 miles from Cazenovia Lake. Occupied by tenant; lease expires on sale. Reason for selling, owner cannot work farm. Price, \$35 per acre. Terms, ½ cash. Will sell stock and tools, if desired. Address, Mrs. W. F. Lucas, Cazenovia, N. Y.

No. 510—Farm of 192½ acres, located 1 mile from Erieville P. O.; 1 mile from railway station at Erieville, on line of N. Y. C. & H. R. R.; 1 mile from school, Methodist Episcopal and Baptist churches, butter factory, cheese factory and milk station. Highways, good. Nearest village, Erieville, population 500, 1 mile distant, reached by highway.

Surface of farm, rolling. Altitude, 1,700 feet. Soil, loam. Acres in meadow, 70; in natural pasture, 70; balance in timber, beech, birch, maple, hemlock basswood; acres tillable, 140. Fruit, apples and pears. Best adapted to corn, potatoes and hay. Fences good. House, 2 stories, in good condition. Cow barn, basement, 32x80. Watered, house, by well; fields, by living springs. Occupied by tenant. Reason for selling, owner has too many farms. Price, \$26 per acre. Address N. E. Richards, Nelson, N. Y.

No. 511—Farm of 110 acres, located 4 miles from Erieville P. O., R. D. 1; 4 miles from railway station at Erieville, on line of Chenango Branch of N. Y. C. & H. R. R.; ¾ mile from school, Methodist and Congregational churches; ½ mile from butter factory, and cheese factory; 4 miles from milk station. Highways, hilly, but good. Nearest village, Cazenovia, population 1,800, 7 miles distant, reached by highway. Surface of farm, rolling. Soil, loam. Acres in meadow, 30; in natural pasture, 40; in timber, 40; maple, beech and hemlock; acres tillable, 69. Fruit, 30 apple, 3 pear, 4 plum trees and 1 cherry tree. Best adapted to hay, grain and dairying. Fences, wire, in good condition. House, 12 rooms, 2 stories, in good condition. Barn, 50x32, in good condition. Watered, house and barn, by well; fields, by springs and stream. Occupied by owner. Reason for selling, poor health of owner. Price, \$32 per acre. Terms, \$1,500 cash, balance on easy terms. Address N. E. Richards, Nelson, N. Y. Owner will rent.

No. 512—Farm of 155 acres, 2 miles from Erieville P. O.; on line of W. S. R. R.; 2 miles from station; 1 mile from school; 2 miles from churches; R. D. 2 from Erieville. Highways, good. Occupied by owner. Rolling surface. Soil, gravelly loam. Acres in meadow, 60; natural pasture, 80; timber, 15, beech, birch and maple; acres tillable, 125. Fruit, apples, pears, plums and cherries. Best adapted to corn, oats, buckwheat, hay and potatoes. Fences, wire, in good condition. House, fair size and condition. One barn in fair condition; also pigpen, henhouse and granary. House watered by well; barns, by springs. Price, \$2,500. Terms, ½ cash, balance on time. Address Palmer H. Brown, Erieville, N. Y.

No. 513—Farm of 110 acres, located 2 miles from P. O., R. D.; 2 miles from railway station at Cazenovia, high school, seminary, churches, butter factory, cheese factory and milk station. Highways, State road. Mail delivered four times a day. Nearest large village, Cazenovia, 2 miles distant, reached by rail and highway; nearest city, Syracuse, population 138,000, 18 miles distant, reached by rail and highway. Surface of farm, chiefly level, some rolling, eastern exposure. Altitude, 1,600 feet. Soil, limestone, gravelly loam. Acres in meadow, 82; in natural pasture, 28; timber, 2, maple, beech, elm and white ash; acres tillable, 90. Fruit, 7 pear trees, 70 apple trees, 2 plum, crab apples, berries of all kinds, currants and grapes for family use. Best adapted to hay, alfalfa, corn and grain. Fences, wire and rail. House, large, 19 rooms, suitable for summer boarders, overlooks 3 bodies of water; Bell telephone in house. Barns, large hay barn; new dairy barn, with concrete floors and modern stanchions; hogpen; carriage barn; shed; large hop kiln and silo, 16x25. Watered, by new drilled well; pump in house; water can also be easily piped to barns; fields, by springs and large watering troughs. Cazenovia Lake, Erieville Reservoir, and Oneida Lake can be seen from building; Chittenango Falls, 5 miles distant. This farm has a good summer market for poultry and eggs, also for truck gardening and milk. Large canning factory for corn and peas at Cazenovia. Occupied by owner. Reason for selling, poor health of owner. Price, \$4,500. Terms, mostly cash. Address Wm. H. Putnam, Cazenovia, R. D.

TOWN OF SMITHFIELD

Population 880

No. 514—Farm of 108 acres, located 7 miles from Canastota P. O., R. D. 5, and railway station, on line of N. Y. C. R. R.; $\frac{3}{4}$ mile from school; 3 miles from churches, butter factory and milk station; 1 mile from cheese factory; 7 miles from milk condensing plant. Highways good, mostly down hill. Nearest city, Oneida, $8\frac{1}{2}$ miles distant, population about 9,000, reached by highway. Surface of farm rolling. Altitude about 1,400 feet. Soil, Miami loam (lime). Acres in meadow, 25; in natural pasture, 10; in timber, 20, basswood, maple, etc. Acres tillable, 88. Fruit, 75 apple, 15 plum and 10 cherry trees. Best adapted

to alfalfa, clover, wheat, corn, oats, cabbage, etc. Fences, woven and barbed wire. House, large, $1\frac{1}{2}$ stories. Outbuildings: hay barn, 28x62; horse barn, 24x32; pig and hen house; 24 swing stanchions in cow stable. Watered by well and spring. Oneida Lake is 8 miles from farm. Occupied by tenant. Reason for selling, owner lives in Oneida and cannot attend to farm. Price, \$5,400. Terms, \$900 down. Address E. Emmons Coe, Oneida, N. Y. Owner will rent with option to buy.

TOWN OF STOCKBRIDGE

Population 1,485

No. 515—Farm of 153 acres, located 3 miles from Stockbridge P. O., R. D. 1; 5 miles from railway station at Oneida Castle, on line of W. S. and O. & W. R. R.; $\frac{1}{4}$ mile from school; 2 miles from Methodist church; 2 miles from cheese factory; 4 miles from milk station. Highways, good, one hill. Nearest city, Oneida, population 9,000, 6 miles distant, reached by highway. Surface of farm, nearly level, except 25-acre side hill, sloping east. Altitude, 500 feet. Soil, limestone. Acres in meadow, 40; in natural pasture, 25; in timber, 18, basswood and hard wood; all tillable except woodland. Fruit, apple orchard, some cherry and plum trees. Adapted to all crops raised in this climate, a good dairy farm. Fences, woven wire, barbed wire and stone wall. 2 houses, one 15 rooms, one 12 rooms, wood, in good condition. 2 sets of barns; 2 on basement, 56x36 and 40x30; and two large sheds; hophouse; storehouse; hogpen on basement; silo, 12x24. Watered, house, by well; barns, by running water in yard; fields, by springs and wells. 3 miles from Oneida Creek, 14 miles from Oneida Lake. Occupied by tenant. 2 farms, could be divided, but would not sell unless all sold. A good hop farm. Reason for selling, owner unable to work farm himself. Price, \$50 per acre. Terms, part cash, will take mortgage on balance. Address N. I. Porter, Oneida, N. Y., R. D. 2, Box 3.

No. 516—Farm of 200 acres, located 1 mile from Stockbridge P. O., R. D. 1; 1 mile from railway station at Valley Mills, on line of O. & W. R. R.; 1 mile from school; 1 mile from Methodist church; $\frac{3}{4}$ mile from butter factory and cheese factory; 1 mile from milk

station. Highways, broken stone and gravel. Nearest city, Oneida, population, 9,000, reached by rail or highway. Surface of farm, level flats and side hill slopes. Soil, limestone, gravel and clay loam. Acres in meadow, 40; in natural pasture, 75; in timber, 20, hemlock, basswood, maple, etc.; acres tillable, 175. Fruit, 1,000 apple trees, young, thrifty and bearing, 20 pear trees, 20 cherry trees, 5 plum trees, etc. Best adapted to hops, alfalfa, corn, wheat, oats and asparagus. Fences, woven and barbed wire, in good condition. House 2 stories, 17 rooms, first-class condition. 4 barns, in good condition, stable room for 40 head of cattle, large silo, hop-house, icehouse, henhouse and hogpen. Watered, house and barns, by spring water; fields, by springs and brooks. Oneida Creek adjoins farm; 15 miles Oneida Lake. Occupied by owner. Reason for selling, owner wishes to retire. Price, \$20,000. Terms, $\frac{1}{4}$ cash. Owner will rent for cash. Address J. E. Quackenbush, Stockbridge, N. Y. Owner will rent.

TOWN OF SULLIVAN

Population 3,367

No. 517—Farm of 144 acres, located $2\frac{1}{4}$ miles from Chittenango P. O., R. D. 1; 2 miles from railway station at Blakeslee, on line of Lehigh Valley R. R., or $4\frac{1}{4}$ miles from railway station at Chittenango, on line of N. Y. C. R. R.; $2\frac{1}{4}$ miles from school, Catholic and Protestant churches; $\frac{3}{4}$ mile from butter factory; 2 miles from milk station. Highways, somewhat hilly, but usually good. Nearest cities, Oneida, 10 miles distant and Syracuse, 16 miles distant, reached by rail and highway. Surface of farm hilly, rolling and level, no stone. Soil, limestone. Acres in meadow, 100; in natural pasture, 40; in timber, 4, cedar, maple and basswood. Acres tillable, 120. Fruit, plums, cherries, currants, grapes and a fine young orchard of 130 apple trees. Best adapted to oats, peas, corn, wheat, potatoes and alfalfa. Fences, wire, fair condition. House, 26x40, good condition. Out-buildings: barn 125x26; barn, 36x40; hoghouse, henhouse and toolhouse. Watered, house and barns, by springs; fields by creek. Occupied by tenant. Price, \$4,000. Terms, \$2,000 cash. Address Mrs. Kate W. Cook, Little Falls, N. Y. Owner will rent.

* No. 518—Farm of 144 acres, located 2 miles from Chittenango P. O., R. D. 2; 4 miles from railway station at Manlius and Chittenango, on line of N. Y. C. & H. R. R. R.; 1 mile from school; 2 miles from churches of all denominations; 2 miles from butter factory; $\frac{1}{2}$ mile from cheese factory; 2 miles from milk station. Highways, State road. Nearest city, Syracuse, population 138,000, 14 miles distant, reached by steam and electric road, or by highway. Surface of farm, part level, part sloping. Altitude, 600 feet. Soil, limestone and black shale loam. Acres in meadow, 50; in natural pasture, 25; in timber, 10, beech, maple, elm, basswood; acres tillable, 130. Fruit, 150 apple trees, all best varieties; excellent varieties of cherries, plums, currants and berries. Best adapted to alfalfa, clover, timothy, oats, barley, wheat, corn, and potatoes. Fences, barbed wire and rail, in good condition. House, 9 rooms, well painted and shingled. Barns: dairy barn, 40x50; grain house, 32x50; stable for 5 horses; shed; cornhouse; pigpen; toolhouse; icehouse; hennery; all in good repair and ample for the farm needs. Watered, house and barn, by water piped from spring; fields, by same and creek. $2\frac{1}{2}$ miles from Lake Cazenovia; 6 miles from Oneida Lake; 2 miles from White Sulphur Springs. Farm has always been occupied by owner until March 1, 1911. A very pleasant homestead; land under high state of cultivation and will yield big profits. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$10,500. Terms, \$4,000 cash, balance in yearly payments. Address C. A. Rogers, agent, Chittenango, N. Y.

No. 519—Farm of 55 acres, located $2\frac{1}{4}$ miles from Chittenango P. O., R. D. 1, 2 miles from railway station at Blakeslee, on line of Lehigh Valley R. R.; $4\frac{1}{4}$ miles to railway station at Chittenango; on line of N. Y. C. R. R.; $2\frac{1}{4}$ miles from school, Catholic and Protestant churches, $\frac{3}{4}$ mile from butter factory; 2 miles from milk station. Highways, dirt roads, usually good. Nearest cities Oneida, 10 miles distant and Syracuse, 16 miles distant; reached by rail and highway. Surface of farm, hilly, rolling and level. Soil, limestone. Acres in meadow, 40; in natural pasture, 10; in timber, 4, hemlock, basswood, maple and walnut. Acres

* Farm is in hands of agent or real estate dealer.

tillable, 50. Fruit, grapes, currants, black berries, red raspberries, gooseberries, pears, plums, prunes, cherries and apples. Best adapted to corn, oats, wheat, potatoes and alfalfa. Fences, wire, good condition. House, 45x25, with large wood house attached. Outbuildings: barn, 36x40, with basement; granary, 20x16; hen house, 40x12; hog house,

20x12; all in good condition except siding on one barn. Watered, house by well and cistern; barns, by well; fields, by creeks. Occupied by owner. Reason for selling, owner has other business. Price, \$40 per acre. Terms, $\frac{1}{2}$ down. Address Mrs. Palmer G. Maine, Chittenango, N. Y., R. D. 1.

MONROE COUNTY

Area, 721 square miles. Population, 283,212. Annual precipitation, 37.5 inches. Annual mean temperature, 49.9°. Number of farms, 5,971. County seat, Rochester.

This county lies in the western part of the state and is bounded on the north by Lake Ontario. It is considered the richest agricultural county in the state. It is intersected by the Genesee river which flows northward and enters the lake seven miles north of Rochester. The county is also well drained by several other streams and creeks.

The surface is nearly level; clay loam soil predominates in the northwestern part of the county and a rich gravelly loam is found in the valleys drained by the Irondequoit and Genesee Rivers. Eighty-nine and three-tenths per cent. of the land area is improved. There are extensive deposits of gypsum, iron ore, water lime and Medina sandstone in the county. It ranks first in the production of apples and wheat, second in peaches and potatoes, third in currants, beans, barley and oats and fourth in strawberries and raspberries. The principal crops are corn, 779,032 bushels; oats, 1,385,560 bushels; wheat, 866,903 bushels; barley, 73,960 bushels; rye, 101,568 bushels; dry beans, 241,502 bushels; potatoes, 2,796,728 bushels; hay and forage, 97,959 tons. The average size of farms is 64 $\frac{1}{2}$ acres. The total valuation of farm property is \$59,764,614, an increase in value of 49.3 per cent. during the past ten years. The average value of land per acre is \$87.92, an increase of \$23.80 during the last decade. The value of improved land is \$113.88 per acre. Domestic animals are as follows: Dairy cows, 17,198; horses, 20,639; swine, 21,786; sheep, 30,700; poultry, 300,139; production of milk, 8,702,188 gallons. The value of all dairy products is \$733,397. Rochester and Buffalo furnish unlimited markets for the produce of the farmers. The county is intersected by the Erie canal (now being enlarged into a barge canal), by three lines of the New York Central and Hudson River Railroad, also the West Shore; Buffalo, Rochester and Pittsburg; the Pennsylvania and Lehigh Valley railroads and two branches of the Erie railroad. Trolley lines extend in all directions from Rochester, a city of 218,149 inhabitants.

Monroe is noted the country over for its nurseries. It grows annually an immense quantity of seeds, plants and trees. There are 200 district schools, excellent high schools in villages and towns with a state normal school located at Brockport. There are 115 miles of state and county roads and 1,077 miles of improved highways. Twenty-six agricultural organizations are devoted to the interest of the farmer.

TOWN OF CLARKSON

Population 1,549

No. 520—Farm of 120 acres, 3 miles from Clarkson P. O., R. D. 19; 2 miles from station of Brockport, on line of the Falls branch of N. Y. C. & H. R. R. R.; $\frac{1}{4}$ mile from district school; 2 miles from State Normal school and high schools and 7 churches of all denominations; 3 miles from cheese factory; 1 mile from canning factory. Good earth roads, level; State road to be built soon. Nearest village, Brockport, population 4,000, distant 2 miles by railway, or trolley $\frac{3}{4}$ mile from farm.

Surface, south half sloping north, north half, level. Altitude, about 550 feet. Soil, clay loam, first-class. No waste land. Has 17 acres of timber, largely young growth beech, maple, elm and basswood. Acres tillable, 102. Has 50 old apple trees, 391 apple trees 3 years old, 8 pear trees, 1 plum, 3 cherries, 1 quince, currants and raspberries in garden, 5 black walnut trees. Land is best adapted to wheat, corn, oats, beans, barley, cabbage, hay, or any crops grown in this climate. Fences, stone, with wire above, and woven wire, in fair condition. Stone house, with frame

wings, 14 rooms, good condition, suitable for one or two families. Gambrel roof barn, 40x95, sheds, 20x70 and 16x40. Cornhouse and hog and henhouse, 20x40, 2 stories, all matched and painted, in good condition. House has well and 2 cisterns; barn has well, never dry; fields have springs: Lake Ontario 8 miles away. Prefer to sell stock, teams, tools and standing crops. Occupied by owner. Reason for selling, owner wishes to move to warm climate. Price, \$160 per acre. Terms, can be arranged. Address A. D. McBain, Clarkson, N. Y.

TOWN OF PARMA

Population 2,954

*No. 521—Farm of 70 acres, located $1\frac{3}{4}$ miles from Hilton P. O. and railway station, on line of R. W. & O. R. R.;

$\frac{1}{2}$ miles from school; $1\frac{3}{4}$ miles from Catholic and Protestant churches. Highways good. Nearest city, Rochester, 16 miles distant, reached by rail. Surface of farm, nearly level. Soil, clay loam. Acres in meadow, 8; in natural pasture, 10; in timber, small wood lot, beech, maple and elm. All tillable except woodland. Fruit, 160 apple trees. Best adapted to wheat, oats, corn, beans and hay. Fences, wire and rail. House, large, fair condition. Outbuildings: five barns, need some repairs. Watered, house, by well; barns, by creek; fields, by creek. Occupied by one of the owners. Reason for selling, to close an estate. Price, \$75 per acre. Terms, easy. Address O. C. Amidon, agent, Hilton, N. Y.

MONTGOMERY COUNTY.

Area, 396 square miles. Population, 57,567. Annual precipitation, 36.95 inches. Annual mean temperature, 49.3°. Number of farms, 2,189. County seat, Fonda.

This county is situated in the eastern part of the state in the Mohawk Valley which traverses the county through its center from east to west. It is also drained by the Schoharie River. Most of the surface is undulating interspersed with level stretches, but the long and fertile valley of the Mohawk is level. The soil in this valley is a rich black loam with areas of gravelly loam. In the rolling lands in the southern part of the county limestone and black slate soil are much in evidence, giving high adaptation to pasturage. Quarries of Trenton limestone and other good building stone are found in the county.

While adapted to all kinds of farming the leading crops were corn, 398,357 bushels; oats, 726,120 bushels; buckwheat, 133,434 bushels; potatoes, 193,644 bushels; hops, 148,329 pounds; hay and forage, 130,173 tons. Total valuation of all farm property is \$15,460,574, an increase of 19.6 per cent. over the last census. Montgomery is another of the many counties of the state where the price of land should double in value in the next ten years; the present value of improved lands being \$50.51 per acre and of the land alone, \$26.92. Domestic animals are reported from almost every farm in the county classified as follows: Dairy cows, 22,804; horses, 7,639; swine, 9,098; sheep, 3,902; poultry, 143,302; milk produced, 13,135,104 gallons; value of all dairy products, \$1,277,634.

The county is intersected by the Erie canal, the New York Central and Hudson River; Fonda, Johnstown and Gloversville, and West Shore railroads. Electric lines also connect Fonda, Johnstown, Gloversville and Amsterdam with Albany, Schenectady and Troy. Amsterdam, the metropolis of the county, has a population of 31,276, contains two academies, large carpet mills, knitting mills and other industries. There are ample home markets for garden truck, fruit and other products of the farm. There are 109 district schools, 11 agricultural societies and organizations, 70 miles of state and county roads and 635 miles of other improved highways.

TOWN OF AMSTERDAM

Population 3,074

*No. 522—Farm of 148 acres, located 4 miles from Amsterdam P. O. and railway station; on line of N. Y. C. R. R.; 2 miles from school. Soil, 100 acres of

excellent land. Acres in timber, 25, hemlock. House, 2 stories, brick, 10 rooms, good condition. Outbuildings: new barn, 30x70. Watered, by well and spring. Owner will trade for city property. Price, \$6,500. Address H. L. Reed, agent, Amsterdam, N. Y.

* Farm is in hands of agent or real estate dealer.

TOWN OF CHARLESTON

Population 900

No. 523—Farm of 300 acres 2 miles from Charleston-Four-Corners; 9 miles from Fultonville station; 5 miles from Glen Village P. O., R. D. 50 acres in woodland; 250 acres in meadow. Best adapted to hay, grain and dairying. House, small, needs repairing. Barns, 32x60, 32x45, in good condition. Watered by well and spring. Fences, fair. Price, \$10 per acre. Terms, $\frac{1}{3}$ cash, balance on mortgage, if desired. Owner will rent for cash or on shares. Address R. B. Fish, Fultonville, N. Y.

TOWN OF MINDEN

Population 4,645

* No. 524—Farm of 50 acres, located $\frac{3}{4}$ miles from Fort Plain P. O. and railway station, on line of N. Y. C. R. R.; $\frac{3}{4}$ miles from school. Surface of farm, rolling. Soil, clay loam. Acres in meadow, 7. All tillable. Fruit, 40 apple, 2 pear, 6 plum and 2 cherry trees, also currants and grapes. Fences, mostly wire, good condition. House, 2 stories, 7 rooms, good condition. Outbuildings: barn, 36x60; wagon house; corn crib; milk house; ice house; wood shed and hen house. Watered by well. Occupied by owner. Price, \$6,000. Terms, \$4,000 cash, balance on mortgage. Address H. L. Reed, agent, Amsterdam, N. Y.

TOWN OF PALATINE

Population 2,517

* No. 525—Farm of 16 acres, located 2 miles from Palatine Bridge P. O.; 2 miles from railway station at Canajoharie, on line of N. Y. C. R. R.; $\frac{1}{2}$ mile from

school; 2 miles from Catholic and Protestant churches. Soil, yellow, black loam. Acres in meadow, 10; in timber, 16; white and black oak, maple, beech, hickory, ash, basswood, pine and hemlock. Fruit, 10 apple, 2 pear and 5 cherry trees. Fences in good condition. House, $1\frac{1}{2}$ stories, 7 rooms. Outbuildings: barn, 30x45; wagon house, 18x22; poultry house, 22x68; poultry house, 13x13; hog house, 10x12. Watered by drilled well. Occupied by owner. Reason for selling, owner has other business. Price, \$5,000. Terms, \$2,000 cash, balance on bond and mortgage at 5%, mortgage must be reduced \$250 or more each year. Address H. L. Reed, agent, Amsterdam, N. Y.

* No. 526—Farm of 250 acres, located 2 miles from Fort Plain P. O., R. D. 4; $1\frac{1}{2}$ miles from railway station, on line of N. Y. C. R. R.; $1\frac{1}{2}$ miles from school; 1 mile from Lutheran church and 2 miles from other churches. State road. Surface of farm, part level, part rolling. Soil, flats, dark loam, some clay loam. Acres in meadow, 70; in timber, 12, hemlock pine and oak. Acres tillable, 80. Fruit, 50 apple, 6 pear, 10 plum, 3 cherry trees, also 12 grape vines. Fences, good, over one-half stone. House, 2 stories, 19 rooms, good. Outbuildings: stone ice house, 15x15; smoke house, 6x6; hog pen, 20x40; hen house, shed, 20x50; corn crib, 25x80, etc. Watered by spring. Occupied by owner. Reason for selling, owner desires to locate in Vancouver, B. C. Price, \$20,000. Terms, prefer cash. Address H. L. Reed, agent, Amsterdam, N. Y.

NIAGARA COUNTY

Area, 504 square miles. Population, 92,036. Annual precipitation, 29.6 inches. Annual mean temperature, 48.6°. Number of farms, 4,346. County seat, Lockport.

This county is located in the western part of the state, bordering on Canada, separated by the Niagara River and the famous Niagara Falls. Its northern boundary is Lake Ontario.

The surface features of the northern part of the county are quite level, but in the southern and eastern portions are found gentle undulations; more than one-half of the surface, however, is level. A rich, sandy and gravelly loam is found on a strip of land extending from the lake to the interior of the county about ten miles in width. A strong clay loam, very productive, is found in the southern portions of the county. Niagara limestone is extensively quarried in some sections. The county is adapted to all forms of agriculture. It is especially noted as being one of the greatest counties of the country in the production of apples, pears, peaches, quinces, etc., producing these in enormous quantities from orchards kept in the

* Farm is in hands of agent or real estate dealer.

highest state of cultivation. In crops there were produced 728,478 bushels of corn; 996,239 bushels of oats; 577,082 bushels of wheat; 32,237 bushels of barley; 73,273 bushels of dry beans; 663,192 bushels of potatoes, and 82,448 tons of hay and forage. The total value of farm property is \$39,665,809, an increase of 69 per cent. over the census of 1900. This increase is exceeded by only one agricultural county in the state. The average value of improved lands, including buildings, is \$111.12 per acre and the average value of farm land per acre is \$74.85, an increase of \$29.15 per acre in the last decade. The county reports dairy cows, 13,058; horses, 15,510; swine, 17,502; sheep, 28,241; poultry, 261,290; product of milk, 6,098,086 gallons, amounting to \$448,356. Buffalo with its nearly a half million inhabitants only twenty-five miles from the center of the county furnishes ample market for products. The county is traversed by the Erie Canal and several important railroads and electric lines. The city of Niagara Falls contains many large manufacturing establishments and hotels, which during the summer months are filled with tourists. Lockport contains six flour mills and numerous saw mills. There are 155 district schools in the county, which with the many high schools, De Veaux College and Niagara University furnish exceptional educational advantages for the students. Eight agricultural organizations are devoted to the best interests of the farmer. The county has 62 miles of state and county roads and 387 miles of improved highways. The county ranks third in the production of wheat and fourth in corn.

TOWN OF HARTLAND

Population 2,638

* No. 527—Farm of 24 acres, $3\frac{1}{2}$ miles from Middleport P. O. and railway station on the N. Y. C. R. R.; R. D. 38 from Middleport; 9 miles from Medina, 5,000 inhabitants; 14 miles from Lockport, 18,000 inhabitants. Highways, good gravel and sand road. Soil, sandy loam, 3 acres underdrained, Acres meadow, 4; all tillable; all could be made pasture. Fruit, 125 apple trees, 200 peach trees, pears, cherries and quinces. Soil adapted to wheat, oats, corn, clover and potatoes and truck farming generally. Occupied by owner. No fences. House, good size and condition. Barn, 30x40; shed, 16x42; hen-house; cornhouse; wagonhouse. House, barn and fields watered by wells. Price, \$8,400. Terms easy. Name and address of owner, Lena F. Clark, Middleport, N. Y. There is a 20-acre field that can be had in connection with this place with 5 acres of apple orchard and 300 peach trees, the price of which is \$3,000.

TOWN OF PORTER

Population 2,655

No. 528—Farm of 80 acres; $2\frac{1}{2}$ miles from Ransomville P. O. and railway

station, on R. W. & O. R. R. Soil, rich clay loam. All tillable. Fruit, 600 apple trees and 500 pear trees, 500 peach trees set this spring, covering 5 acres. Soil adapted to general farming and fruit raising. Price, \$85 per acre. Terms on application. Name and address of owner, E. T. Ransom, Ransomville, N. Y.

* No. 529—Farm of 96 acres, $3\frac{1}{2}$ miles from Ransomville P. O., R. D. 24, and railway station, on line of R. W. & O.; $\frac{3}{4}$ mile from school; $3\frac{1}{2}$ miles from churches and milk station. Highways, good. Nearest large village, Ransomville, population about 700. Surface, level. Soil, gravelly loam. Acres in timber, 8, beech, maple; acres tillable, 88. Fruit, 2 acres of pear trees, 14 acres of apple trees. Farm is on shore of Lake Ontario. Fences, fair. House, 9 rooms, fair condition. New barn. Watered by wells. Occupied by tenant. Reason for selling, owner non-resident. Owner will rent for cash, or with option to buy. Price, on application. Address H. Sanford, agent, Wilson, N. Y.

ONEIDA COUNTY

Area, 1,196 square miles. Population, 154,157. Annual precipitation, 44 inches. Annual mean temperature, 47.9°. Number of farms, 6,929. County seat, Utica.

This county is centrally located and is bounded on the southwest by Oneida creek and Oneida Lake. It is drained by the Mohawk and Black Rivers and by Oriskany, Fish and West Canada creeks. In the region around and extending east of Oneida

* Farm is in hands of agent or real estate dealer.

Lake the surface is level. The hills of the northern part are formed in long, broad ridges, elevation from 200 to 600 feet. The soil in this section is a sandy and gravelly loam, very productive. In the low hills near the valley clay loam is found, while in the higher elevations of the northeastern part gravelly loam predominates. Among the leading minerals of the county are gypsum, iron ore and hydraulic limestone. Oneida is one of the leading farm counties of the state, some of the principal crops being corn, 402,688 bushels; oats, 721,449 bushels; barley, 25,105 bushels; buckwheat, 54,411 bushels; potatoes, 1,192,575 bushels; hops, 1,804,878 pounds; hay and forage, 321,802 tons. The total value of farm property is \$38,437,991, an increase of 44.1 per cent. over the value of 1900. The average price of improved land throughout the county is \$42.81. The county reports 64,779 dairy cows; 16,652 horses; 18,661 swine; 6,510 sheep; 276,642 poultry. There are also reported about 35,000 head of cattle, exclusive of dairy cows. There were produced 35,045,439 gallons of milk and the total receipts from all dairy products was \$3,401,563. There are 169 milk stations distributed over the county. Oneida county is intersected by the Erie and Black River canals and by the New York Central and Hudson River; Delaware, Lackawanna and Western; Rome, Watertown and Ogdensburgh, and West Shore railroads, all of which center at Utica. The cities of Utica and Rome furnish ample markets; and New York City is a ready market for all export products. There are 358 district schools and at Clinton is located Hamilton College, a well-known institution of high character. There are 125 miles of state and county roads and 2,100 of improved highways; also 22 agricultural societies to assist the farmer with his work. The county ranks third in hops, third in the production of hay and forage and third in the production of milk.

TOWN OF BRIDGEWATER

Population 832

No. 530 — Farm of 236 acres, located $2\frac{1}{2}$ miles from Bridgewater P. O. and railway station, on line of D. L. & W. and U. and V. Rys.; $\frac{1}{2}$ mile from school and cheese factory, $2\frac{1}{2}$ miles from churches and milk station; 6 miles from milk condensing plant. Highways somewhat hilly. Nearest large village, Waterville, 6 miles distant, population about 1,000, reached by rail and highway. Surface of farm, rolling. Altitude about 1,750 ft. Soil, clay and dark loam. Acres in meadow, 70; in natural pasture, 80; in timber, 17, beech, maple, hemlock, basswood and ash. Acres tillable, 200. Fruit, 50 grafted fruit trees. Best adapted to corn, oats, hops, potatoes, barley, beans, etc. Fences, barbed wire, good. House, 2 stories, upright and wing. Outbuildings: barn, 30x104, on a basement of wood and stone, fair condition. Watered, house, by well; barn, by running water in tub; fields, by springs. Occupied by tenant. Reason for selling, ill health of owner. Price, \$3,000. Terms, \$1,000 down, balance on bond and mortgage. Address A. C. Sisson, Brookfield, N. Y. Owner will rent with option to buy.

TOWN OF CAMDEN

Population 3,426

No. 531—Farm of 290 acres, $2\frac{1}{2}$ miles from Camden station, on line of R. W. & O. branch of N. Y. C. R. R.; also L. V. R. R.; 1 mile from State road as surveyed in 1911. Well adapted to dairying and fruit raising. Apple orchard, 100 trees. Large quantity of timber. One house, 10 rooms, in good condition. Numerous barns and outbuildings, sufficient for farm, in fair condition. Well watered and fairly fenced. This farm will keep 50 head of stock. Price, \$2,500. Terms easy. Address R. M. Rush, Camden, N. Y.

No. 532—Farm of 105 acres, located $1\frac{1}{2}$ miles from Camden P. O., R. D. 4, and railway station, on line of N. Y. C. & H. R. R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{2}$ miles from several Protestant churches; $1\frac{1}{2}$ miles from butter factory and milk station; $\frac{1}{2}$ mile from cheese factory. Highways, very good. Nearest city, Rome, population 18,000, distant 18 miles by rail and highway. Surface, rolling. Altitude, about 400 feet. Soil, gravel and clay. 20 acres of meadow; 45 acres of natural pasture; 30 acres of timber, beech, birch and maple; 50 acres are tillable. 2 apple orchards, besides other small

fruits. Can raise corn, potatoes and clover. Fences, of wire, board and stone, in good condition. 2 houses, one of 9 rooms and one of 6 rooms, in good condition. 4 barns, one 30x40, with basement stable and cement floor; horse barn and carriage house, 26x40; barn, 24x30; one 20x26; also granary with cement floor; all in good condition. House has well water; barns, well water; fields have springs and brook. The Adirondack Mountains are on the north and Oneida Lake, 12 miles distant, south. This farm is situated on the direct highway leading from Camden to Rome and Utica. Occupied by owner. Reason for selling, owner has other business to attend to. Price, \$3,500. Terms, $\frac{1}{2}$ cash, and balance on mortgage. Address E. Bernard Miller, R. D. 4, Camden, Oneida Co., N. Y.

533—Farm of 100 acres, $2\frac{1}{2}$ miles from Camden P. O., R. D. 4, and station on line of N. Y. C. & H. R. R. R.; 1 mile from school; $2\frac{1}{2}$ miles from Methodist, Presbyterian, Congregational, Episcopal and Catholic churches; $2\frac{1}{2}$ miles from butter factory; 1 mile from cheese factory; $2\frac{1}{2}$ miles from milk station. Highways, good. Nearest village, Camden, population 2,800, $2\frac{1}{2}$ miles distant by highway. Surface, rolling. Altitude, about 600 feet. Soil, loam. 40 acres of meadow; 40 acres in natural pasture; 20 acres in timber, mostly hard; 80 acres tillable. 4 pear trees, 6 cherry, 2 plum, 200 apple and 12 butternut. Land is adapted to raising apples, corn, oats, hay and potatoes. Some stone walls and board and wire fences, in fair condition. House, nearly new, main portion 24x26, wing, 16x22, containing 10 rooms, woodshed attached. Cow barn, nearly new, 30x70, with basement, silo and manure carrier, shed attached, 12x40; horse barn, 40x16, in fair condition. House and barns have running water piped from spring and well, and fields have plenty of springs, with brook running across corner of pasture. Has trout stream, Cobb Brook, 40 rods distant. Farm occupied by owner. Reason for selling, poor health. Price, \$3,500. Terms, \$1,000 down, balance on mortgage, payable \$100 annually, with interest. Would take a small place of 25 to 30 acres as part payment. Address Franklin Skinner, Camden, N. Y., R. D. 5. Owner will rent.

TOWN OF DEERFIELD

Population 1,660

No. 534—Farm of 157 acres, 1 mile from North Gage P. O.; $2\frac{1}{2}$ miles from Barneveld station, R. D. from Barneveld; 10 miles from Utica. Soil, clay loam, slate and limestone. Acres in meadow, 55; acres in pasture, 80; acres timber, 20; 2 acres in orchard and yard. Medium-sized house, 32x25, two wings and woodshed, in first-class condition. 2 barns, one, 90x40, cement floor, watering basins, also silo, horse barn, 54x32, and outbuildings, in good repair. Watered by brooks, spring and 2 wells. Fences, post and wire, in good condition. A dairy of pure-bred and grade Holstein cows now on the farm will also be offered for sale, when the farm is sold. A macadamized country road leading north from Utica, N. Y., is near the farm. Reason for selling, advanced age of owner. Price, \$12,000. Terms, $\frac{2}{3}$ cash, balance in 5 years, on mortgage. Liberal discount for cash. Address John K. Walker, Holland Patent, N. Y.

*No. 535—Farm of $44\frac{1}{2}$ acres; 5 miles from Deerfield P. O.; 5 miles from Utica station, on line of N. Y. C. R. R.; R. D. from Deerfield. Highways, good. Fair soil. 44 acres of valley land. No fruit. Adapted to dairying. Occupied by tenant. Fences, mostly wire, in fair condition. House, 32x30, kitchen and woodhouse, in fair condition. New barn, 50x47. Price, \$2,250. Terms, easy. Address John D. Collins, Devereux Block, Utica, N. Y.

No. 536—Farm of 150 acres, located $1\frac{1}{2}$ miles from Deerfield P. O., R. D. 2; $2\frac{1}{2}$ miles from railway station at Utica, on line of N. Y. C. R. R.; 1 mile from school; $1\frac{1}{2}$ miles from Catholic and Protestant churches. Highways good but somewhat hilly. Surface of farm, level, rolling and hilly. Soil, gravel and sand. Acres in meadow, 50; in natural pasture, 35; in timber, 15, beech, birch and hemlock. Acres tillable, 50. Fruit, plums, apples, pears and grapes. Best adapted to potatoes, corn and garden truck. Fences, wire and post, good condition. House, large, 20x40, good condition. Outbuildings: barn, 60x40, basement; silo; barn, 35x32; horse barn, 18x30; shed, 15x18; chicken house; tool house and several small buildings. Watered, house, by well and cistern; barns and

* Farm is in hands of agent or real estate dealer.

fields, by springs. Occupied by tenant. Reason for selling, owner a widow. For price and terms address Mrs. Geo. Grossman, 31 Linwood Place, Utica, N. Y.

TOWN OF FORESTPORT

Population 1,100

No. 537—Farm of 126½ acres, located 2 miles from Forestport P. O.; 1¼ miles from railway station of Forestport, on line of the Mohawk & Malone R. R.; ½ mile from school; 2 miles from Catholic and Protestant churches; 6 miles from cheese factory; 5 miles from milk station. Highways, good. Nearest large village, Boonville, population 2,000, distant 8 miles, reached by highways and rail. Surface, rolling. Altitude, 1,200 feet. Soil, sandy. 20 acres of meadow; 55 acres of natural pasture; 51½ acres of timber, mostly second growth; 50 acres tillable. A few apple trees. Land is adapted to hay, potatoes, and root crops of all kinds. Wire fences, in fair condition. House, 18x24, wing, 14x18, shed, 12x24; house, 18x20, shed, 10x18, in fair condition. Barn, 40x50, underground stables, good condition. House has well water; barns have wells; fields have springs and brook. Gulf brook runs through this entire property, and has fine fish ponds, well stocked with trout. Black River 1 mile away. There are 5,000 Christmas trees on this place, and water power sufficient to light buildings and run small machinery. Occupied by tenant as part owner. Reason for selling, to settle estate. Price, \$3,000. Terms, ½ cash, balance to suit purchaser. Address Laura A. Kilborn, Forestport, Oneida Co., N. Y.

No. 538—Farm of 300 acres; 2 miles from Forestport station. Sandy loam soil. 75 acres timber. 2-story house, 18x26; 2 wings, one, 16x22, one, 20x26; in good condition. Newly painted. Barn, 30x40 and 22x35, newly shingled. Well watered. Fences, good. Price and terms, given on application. Name and address of owner, August Anderson, Forestport, N. Y.

No. 539—Farm of 130 acres, situated 2½ miles from Forestport P. O.; 2½ miles from railway station on M. & M. R. R.; R. D. 1 from Forestport. Highways, good. Soil, sandy. Acres in meadow, 40; tillable, 70; natural pasture, 20; timber, 40, second growth.

Fruit, 20 apple trees. Best adapted to corn, oats and potatoes. Fences, wire, fairly good. House, 1½ stories, in good condition. Barn, 30x80, fairly good. Watered by well and stream. Reason for selling, ill health of owner. Price, \$2,000; terms, half down. Address Andrew J. Lockwood, Forestport, N. Y., box 57, route 1.

*No. 540—Farm of 96 acres, located 1 mile from Forestport P. O.; 3 miles from Alder Creek station on line of M. & M. R. R., and R. W. & O. R. R. Highways, good. Farm is 30 miles north of Utica, which has a population of about 75,000. Occupied by tenant. Surface, level. Soil, sandy loam. Acres in pasture, about 80; timber, 16, small spruce, poplar, etc. Best adapted to potatoes, corn, oats, buckwheat and berries. Fences, wire. Gulf brook runs through farm, good fishing, dam could easily be constructed. Good hunting for deer and partridges in vicinity. Reason for selling, owner living elsewhere. Price, \$500. Terms, cash. Address, Silas W. Ferguson, Worcester, N. Y.

No. 541—Farm of 250 acres; 2½ miles from Forestport P. O., R. D. 1; 2 miles from railway station at Forestport, on line of M. & M. R. R.; 1 mile from school; 2½ miles from Methodist, Catholic, Presbyterian and Episcopal churches; 3 miles from cheese factory. Highways, good. Nearest city, Utica, population 75,000, 30 miles distant, reached by rail. Surface of farm, level. Altitude, 1,250 feet. Soil, sandy loam. Acres in meadow, 200; in natural pasture, 50; acres tillable, 250. Best adapted to oats, potatoes, hay. House, 5 rooms, in fair condition. 2 barns, 36x40. Watered, house, by well; fields, by creek. ¼ mile to Big Woodhull River. Reason for selling, owner has other business. Price, \$2,500. Terms, part cash. Address James G. Jones, Forestport, N. Y.

*No. 542—Farm of 50 acres, located 3 miles from Forestport P. O., R. D. 1; 3 miles from railway station at Forestport, on line of M. & M. R. R.; 1 mile from school; 3 miles from Methodist, Catholic, Presbyterian and Episcopal churches; 4 miles from milk station. Good country roads. Altitude, 1,300 feet. Soil, sandy loam. Acres in meadow, 5; in natural pasture, 45; in timber, 10, second growth. Best adapted to oats, hay, potatoes, and buckwheat.

* Farm is in hands of agent or real estate dealer.

Adjoins Big Woodhull River. Fine fishing and hunting in this vicinity. Good deer hunting. Reason for selling, owner lives at distance from property. Price, \$100. Terms, cash. Address S. W. Ferguson, Worcester, N. Y., or James Jones, Forestport, N. Y.

*No. 543—Farm of 40 acres, located 2½ miles from Forestport P. O., R. D. 1; 2 miles from railway station at Forestport, on line of M. & M. R. R.; 1 mile from school; 2½ miles from Methodist, Presbyterian, Catholic and Episcopal churches; 4 miles from milk station. Good country roads. Nearest city, Utica, population 75,000, 30 miles distant, reached by M. & M. R. R. or R. W. & O. R. R. Surface of farm, rolling. Altitude, 1,250 feet. Soil, sandy loam. Acres in meadow, 10; in natural pasture, 30; acres tillable, 20. Best adapted to oats, hay, potatoes and buckwheat. Fences, wire. Good fishing and hunting. Reason for selling, owner does not live in this section of State. Price, \$150. Terms cash. Address James Jones, Forestport, N. Y., or S. W. Ferguson, Worcester, N. Y.

TOWN OF KIRKLAND

Population 4,333

*No. 544—Farm of 135 acres, located 3 miles from Clinton P. O., R. D. and railway station, on line of O. & W. R. R.; ½ mile from school; 3 miles from churches and milk station; 5 miles from milk condensing plant. Highways good. Nearest city, Utica, 9 miles distant, population 75,000, reached by railroad, trolley and highway. Surface of farm, level. Soil, gravelly loam. Acres in meadow, 50; in natural pasture, 20; in timber, 20, maple, beech, hemlock and basswood. Acres tillable, 100. Fruit, 110 apple trees, also pears, plums, cherries, grapes and currants. Best adapted to corn, potatoes and grain. Fences, barbed wire, fair condition. House, 10 rooms, fair condition. Outbuildings: barn, 90x30, with wing, 30x40; hog house; granary and hop house. Watered by running spring and creek. Reason for selling, owner has too much land. Price, \$6,500. Terms, \$2,000 cash, balance on bond and mortgage at 5%. Address W. H. Brockway, agent, Clinton, N. Y.

*No. 545—Farm of 150 acres, located 5 miles from Clinton P. O., R. D. 1 and railway station, on line of O. & W. R. R.; ½ mile from school; 2 miles from churches and butter factory; 5 miles from milk station; 7 miles from milk condensing plant. Highways, somewhat hilly, but good. Nearest city, Utica, 9 miles distant, population 75,000, reached by highway. Surface of farm, 100 acres level, balance rolling. Soil, gravelly loam. Acres in natural pasture, 30; in timber, 20, maple, beech, hemlock and basswood. Acres tillable, 100. Fruit, 50 apple trees, 5 pear trees and enough cherries and small fruits for family use. Best adapted to hay, oats, barley, corn and potatoes. Fences, barbed wire, fair condition. House, 10 rooms; woodshed. Outbuildings: barn, 70x30, with basement; hop house and hog pen, 40x50; silo, 20x30; all in good condition. Watered, house, by well and cistern; barns, by running spring water; fields, by springs and small brook. Occupied by tenant. Reason for selling, ill health of owner. Price, \$6,500. Terms, \$3,000 cash, balance on bond and mortgage at 5%. Address W. H. Brockway, agent, Clinton, N. Y.

TOWN OF LEE

Population 1,379

No. 546—Farm of 140 acres; 1½ miles from post office; a new railroad close to farm, depot 1½ miles from farm; large new canning factory 1½ miles from farm. Soil, gravel, good. Acres in meadow, 40; pasture, 40; timber, 20, 40 acres under plow. House, 10 rooms, in good repair. Large barn, 30x60; also horse barn. 2 apple orchards, bearing. Watered by spring. Fences, woven wire. Price, \$3,500. Terms, \$2,000 down, balance on time. Address Wm. M. Kenyon, Taberg, N. Y., R. D. 1.

TOWN OF MARCY

Population 1,301

No. 547—Farm of 101 acres, located 3 miles from Marcy P. O., R. D. 2, and railway station, on line of Black River R. R.; ¼ mile from school; 1 mile from churches; 3½ miles from butter factory, cheese factory, milk station and milk condensing plant. Highways good. Nearest city, Utica, population about 75,000, 6 miles distant, reached by high-

* Farm is in hands of agent or real estate dealer.

way. Surface of farm, level. Soil, loam. Acres in meadow, 50; in natural pasture and timber, 51, hemlock, maple, birch, beech, etc. Acres tillable, 50. Fruit, apples, cherries and plums. Best adapted to hay, oats, corn, potatoes and cabbage. Fences, wire and rail, fair condition. House, 14 rooms, good condition. Outbuildings: horse barn; cow barn; shed, medium size; fair condition. Watered, house by well and cistern; barns, by wells; fields, by creeks. Occupied by tenant. Reason for selling, to close an estate. Price, \$26 per acre. Terms, $\frac{1}{2}$ down, balance \$100 per year and interest. Address R. W. Jones, Marcy, N. Y. Owners will rent for cash or with option to buy.

No. 548—Farm of 112 $\frac{1}{2}$ acres, located 3 miles from Marcy P. O., R. D. 2, and railway station, on line of Black River R. R.; $\frac{3}{4}$ mile from school; 1 mile from Protestant church; 4 miles from butter factory and milk condensing plant; 2 $\frac{1}{2}$ miles from cheese factory; 3 miles from milk station. Highways somewhat hilly but good. Nearest city, Utica, 6 miles distant, population about 75,000, reached by highway. Surface of farm, part hilly and part level. Good soil. Acres in meadow, 56; in natural pasture, 50; in timber, 6, beech, birch, maple, ash, elm, hemlock. Acres tillable, 56. Fruit, about 50 apple trees, also pears, plums, cherries, grapes and currants. Best adapted to hay, corn, oats, potatoes, etc. Fences, wire, fair condition. House, 8 rooms, old but in good condition, wood shed attached. Outbuildings: barn, 26x40; barn, 30x54, shed attached; store house, 18x24, with building, 20x24 annexed, in need of repairs. Watered, house, by wells; barns, by creek; fields, by creek and springs. Occupied by owner and tenant. Reason for selling, owner cannot attend to farm. Price, \$4,000. Terms, cash or part cash, balance on first mortgage. Address Mrs. Margaret J. Jones, Marcy, N. Y., R. D. 2, care of B. F. Jones.

TOWN OF NEW HARTFORD

Population 5,947

No. 549—Farm of 160 acres, located 1 $\frac{1}{2}$ miles from Sauquoit P. O., R. D. 1, and railway station, on line of D. L. & W. R. R.; 1 mile from school and Protestant church, 1 $\frac{1}{2}$ miles from butter factory and milk station; 2 miles from

cheese factory and 8 miles from milk condensing plant. Highways good. Nearest city, Utica, 5 miles distant, population 75,000, reached by rail. Surface of farm, rolling. Altitude about 1,000 ft. Soil, sandy loam. Acres in meadow, 40; in natural pasture, 20; in timber, 15, maple, beech and hemlock. Acres tillable, 130. Fruit, 100 apple and 12 pear trees. Best adapted to corn, wheat, potatoes and hops. Fences, wire, good condition. House, 14 rooms, good condition. Outbuildings: 2 basement barns, 50x100 and 50x80; barn, 20x50; hog pen; shed; tool house and double hop house; all in good condition. Watered, house, by well; barns and fields, by running water. Occupied by tenant. Reason for selling, to settle an estate. Price, \$20,000. Terms, \$8,000 cash, balance on mortgage. Address Mary J. Philo, Washington Mills, N. Y.

TOWN OF PARIS

Population 2,660

No. 550—Farm of 200 acres; 10 rods from post office; 100 rods from railway station, on line of D. L. & W. R. R.; 20 rods from school; 15 rods from church; 1 mile from milk station; 8 miles from milk condensing plant. Highways, State road. Surface of farm, level and rolling. Altitude, about 1,200 feet. Soil, gravelly and sandy loam. Acres in meadow, 40; in natural pasture, 10; in timber, 1; acres tillable, 190. Fruit, three acres in apples. Best adapted to hops, potatoes, dairying, etc. Fences, wire, good. House 2 $\frac{1}{2}$ stories, 16 rooms, bath and toilet on 2 floors, laundry, running spring water, hot and cold water, all city improvement. Outbuildings, in perfect repair, capacity for 75 head of cattle. Watered by never-failing springs. This farm is 100 rods from Sauquoit Creek. This property is 12 miles from city of Utica on State road. 3 tenant houses. Large house was remodeled 5 years ago at cost of \$4,500. Occupied by owner. Reason for selling, failing health and advanced age of owner. Price, \$20,000. Terms, $\frac{1}{2}$ cash. Address J. W. Risley, Cassville, N. Y.

TOWN OF REMSEN

Population 1,087

*No. 551—Farm of 50 acres; 2 miles from Hinckley P. O.; 2 miles from railway station at Hinckley, on line of M. & M. R. R.; 1 mile from school and

* Farm is in hands of agent or real estate dealer.

Methodist church; 2 miles from cheese factory. Good country roads. Nearest city, Utica, population 75,000, 25 miles distant, reached by M. & M. R. R. Surface of farm, rolling. Altitude, 1,200 feet. Soil, sandy loam. Acres in meadow, 15; in natural pasture, 35; acres tillable, 25. Best adapted to poultry raising, potatoes and buckwheat. House, 7 rooms, in need of repair. Watered by well. 2 miles to West Canada Creek. First-class deer hunting, good fishing, good place for a summer home. Reason for selling, owner does not live in this section of the State. Price, \$300. Terms, cash or $\frac{1}{2}$ cash. Address S. W. Ferguson, Worcester, N. Y., or James Jones, Forestport, N. Y.

TOWN OF SANGERFIELD

Population 2,086

*No. 552—Farm of 180 acres; $2\frac{1}{2}$ miles from Sangerfield or Oriskany Falls P. O.; 3 miles from Waterville railway station, on line of D. L. & W. R. R.; R. D. Highways, good. This farm is situated on the western side of Chenango Valley, sloping to the southeast. Acres under cultivation and in natural pasture, 130; timber, 40, cedar. Adapted to hop raising and usual farm products. Occupied by tenant who keeps 25 cows and ships milk to New York City. Fences, fair. House, in fair condition. Barns, one barn, 40x80, stone stable, basement; fine hophouse with building for hop pickers; other barns and buildings. Reason for selling, to close an estate. Price, \$7,600. Terms, easy. Name and address of executor, John D. Collins, Utica, N. Y.

TOWN OF STEUBEN

Population 785

No. 553—Farm of $15\frac{1}{2}$ acres, located 5 miles from Holland Patent P. O., R. D. 1, and railway station, on line of R. W. & O. R. R.; $1\frac{1}{2}$ miles from school; from 2 to 5 miles from Catholic and Protestant churches; $2\frac{1}{4}$ miles from butter factory; $1\frac{3}{4}$ miles from cheese factory; $2\frac{1}{4}$ miles from milk condensing plant and 5 miles from milk station. Highways, mostly good. Nearest city, Utica, 16 miles distant, population about 75,000, reached by rail and highway. Surface of farm, level and rolling. Altitude about 840 feet. Soil, some sandy, some rich, good. Acres in meadow, 6;

in natural pasture, 9; in timber, 1, spruce, hemlock and poplar. Acres tillable, 11. Fruit, about 10 apple trees. Best adapted to potatoes, corn and vegetables. Fences, mostly wire. House, $1\frac{1}{2}$ stories, 8 rooms, fair condition. Outbuildings: barn, 60x30; room for 3 horses, 3 cows, hay, straw, etc., and wagons, part of barn old, part comparatively new, also chicken house. Watered, house and barn, by well; fields, by streams and springs. Unoccupied. Would make a good location for chicken farm. Employment could easily be secured on adjoining farms. Price, \$800. Terms, \$100 down, balance on monthly payments. Address F. H. Cookingham, 122 Genesee street, Utica, N. Y. Owner will rent.

TOWN OF VERNON

Population 3,197

*No. 554—Farm of 251 acres; 3 miles from Vernon P. O. and railway station, on line of N. Y. C. R. R. and W. S. R. R.; 1 mile from trolley; R. D.; creamery adjoins farm. Highways, good. Fine soil, gravelly loam. Adapted to hops and all farm products. Some timber. Apple orchard. Occupied by tenant. Fences, good. Large house and cottage for help, in fine condition. Barn, 100x40, with carriage house connected, stone stable basement. Watered by 2 never-failing streams. Reason for selling, to close an estate. Price, \$15,000. Address John D. Collins, Devereux Block, Utica, N. Y.

No. 555—Farm of 260 acres; 2 miles from Vernon P. O. and railway station, on Oneida Electric R. R., with hourly service. Highways, good. Soil, gravel and loam. Acres in meadow, 185; acres tillable, 240; acres natural pasture, 70; acres timber, 5, maple and birch. Best adapted to corn, grain, hops and dairying. Altitude, 600 feet. Fences, post and wire. Large house, 4 rooms, bedroom and pantry on ground floor, five chambers, cellar and wood house, in good condition; also old dwelling which has been used as storehouse but which could be put in good condition at little expense. Basement barn, 100x40, with wing, 36x25, 2 silos attached; horse barn, 38x26; hophouse, 45x20; hog house, 45x16. Watered, house and barns, by springs; fields, by running water. Reason for selling, owner wishes to retire,

* Farm is in hands of agent or real estate dealer.

This farm is $5\frac{1}{2}$ miles from Oneida, on the N. Y. C. R. R., and 4 miles from Kenwood, on the O. & W. R. R., near canning factory, cheese factory and milk station. Price, \$40 per acre. Terms, $\frac{1}{3}$ down. Name and address of owner, F. A. Gary, Vernon, N. Y. Owner will rent.

TOWN OF VERONA

Population 3,456

No. 556—Farm of 129 acres; 1 mile from Higginsville P. O.; $3\frac{1}{2}$ miles from Verona station, on line of N. Y. C. and O. & W. R. R.; R. D. 2 from Durhamville; 10 rods from school. Two R. F. D. carriers pass house daily. Highways, in fair condition. Soil, sand and gravelly loam and muck. Acres in meadow, 50; tillable, 75; natural pasture, 52; timber, 2, maple and ash, second growth. Fruit, pears, plums and apples. Best adapted to grass, corn and oats. Occupied by owner. House, 2 stories, in good condition. Cow barn, 36x80, 20-foot posts, with 7-foot basement, pine siding, re-shingled in 1905 with Washington red cedar shingles; horse barn and wagonhouse, 36x50, pine siding, slate roof; hoghouse and henhouse with basement, 20x30, 16-foot posts, 2 floors, used for storage; silo, 20x21x21; cow barn with basement above ground; all floors in barns and hoghouse concrete. House built in 1882, well painted, tin roof, concrete cistern under kitchen, 10x10, and 8 feet deep; furnace heat. There is also on the place a shop or toolhouse, 20x30, 16-foot posts and pine siding; icehouse, wood and storehouse, 18x20, 14-foot posts and pine siding. All buildings have been painted once and some twice. Farm will keep from 30 to 35 head of stock and 4 horses. Reason for selling, advanced age and poor health of owner. For price and terms address Jerome A. Jackson, Durhamville, N. Y.

No. 557—Farm of 180 acres; on road leading from Verona station to Vernon; 2 miles from either place; on the line of the proposed Buffalo, Rochester & Eastern Railway; 2 miles from 2 leading railroads, the N. Y. C. and W. S. & B.; 2 miles from canning factories and high school. Highways, good. Soil, sandy loam, clay subsoil. Acres in meadow, 60; acres tillable, 150; acres timber, 20, maple, beech, elm and hemlock. Fruit, apples, pears, plums, prunes and cherries. Best adapted to general farming. Occupied by owner.

Fences, wire, in good condition. House, modern, 14 rooms, slate roof; built in 1895. Dairy barn, 120x40, 54 feet high, slate roof, built in 1895. Horse barn, 50x34, slate roof, built in 1895; hoghouse, 60x16, steel roof, built in 1900. Maple grove, with sugarhouse, in good condition. Water, gravity system in barnyard; never-failing well and large cistern in house. This is one of the most desirable farms in the county, as to location, surroundings and general advantages. Reason for selling, advanced age of owner. Price, \$15,000. Terms, \$8,000 cash, balance can remain on bond and mortgage. Name and address of owner, I. L. Amann, Verona, N. Y., R. D. 2.

No. 558—Farm of 150 acres, $\frac{1}{2}$ mile from State Bridge P. O.; 40 rods from station on line of O. & W. R. R.; $\frac{1}{2}$ mile from school; 1 mile from church; 40 rods from milk station. Highways, good. 4 miles from Oneida, population about 9,000, reached by rail and highway. Occupied by owner. Surface, part rolling and part level. Soil, gravel and sand loam. 6 acres in timber, 140 acres tillable. Best adapted to corn, small grains, hay and potatoes. Fences, barbed wire, in good condition. House, 2 stories, upright, 18x26, wing, 16x24, $1\frac{1}{2}$ stories. Barn, 30x70, hemlock; barn, 26x25. Watered by well and running water. 4 miles from Oneida Lake. Price, \$5,000. Terms, $\frac{1}{3}$ down. Address Asel Wilcox, Verona Station, N. Y.

No. 559—Farm of 250 acres; 2 miles from Verona Station P. O.; 2 miles from railway station, on line of N. Y. C. & H. R. R. R.; 1 mile from school; 3 miles from churches; R. D. 1 from Verona station. Highways, good. 3 miles from Oneida, population about 9,000, reached by highway. Occupied by owner. Level surface. Soil, muck, sandy loam, with clay subsoil. Acres in meadow, 90; pasture, 100; acres tillable, 225. Fruit, apples. Best adapted to hay, grain and dairying. Fences, barbed wire, in good condition. House, $1\frac{1}{2}$ stories. Barns for stabling 80 cows and 15 horses and capable of holding enough feed for them. Watered by well and windmill. 6 miles from Oneida Lake. Price, \$15,000. Terms, $\frac{1}{3}$ down. Address Asel Wilcox, Verona Station, N. Y.

No. 560—Farm of 339 acres; 5 miles from Durhamville P. O., R. D. 1; $2\frac{1}{2}$ miles from railway station at State Bridge, on line of N. Y. O. & W. R. R.; $2\frac{1}{2}$ miles from railway station at Sylvan Beach, on line of L. V. R. R.; $\frac{3}{4}$ mile from school; 2 miles from church; 1 mile from cheese factory; $2\frac{1}{2}$ miles from milk station. Highways, level. Nearest city, Oneida, population about 9,000, 7 miles distant, reached by rail and highway. Surface of farm, level and rolling. Soil, sandy loam and clay. Acres in meadow, 100; in natural pasture, 150; in timber, 50, maple, elm and ash; acres tillable, 150. Fruit, apples, cherries and plums. Best adapted to grass, corn, oats and buckwheat. Fences, woven wire, barbed wire and rail, good condition. House, 8 rooms, fair condition. Outbuildings: one barn, 36x60; barn, 40x60, with basement; barn, 20x70; cornhouse; hayhouse; henhouse and silo, 16x24, good condition. Watered by well and creek. This property is $2\frac{1}{2}$ miles from Sylvan Beach. Occupied by owner. Reason for selling, owner has another farm and cannot attend to both. Price, \$8,000. Address Edgar S. Bennett, Durhamville, N. Y.

No. 561—Farm of 197 acres, located 2 miles from Durhamville P. O., R. D. 2; $\frac{1}{3}$ mile from railway station at State Bridge, on line of N. Y. O. & W. R. R.; $\frac{1}{4}$ mile from school; $\frac{3}{4}$ mile from churches; 1 mile from cheese factory; $\frac{1}{3}$ mile from milk station. Highways, level and good. Nearest village, Oneida, population about 9,000, 4 miles distant, reached by rail and highway.

Surface, rolling. Acres in meadow, 40; in natural pasture, 60; in timber, 35 or 40, hemlock, soft maple, elm, birch and cedar; acres tillable, 60. One young and one old apple orchard. A few cherries, pears and grapes. Best adapted to corn, potatoes, grain, etc. Fences, wire, in good condition. Two houses, one, 12 rooms, one, 7 rooms. Horse barn, 40x60, good condition; cow barn, 30x50, with addition on side and end, suitable for 25 head of stock; new silo. Watered, house and barns, by wells; fields, by brook. Oneida Lake 3 miles distant. About 400 feet from Erie Canal. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$6,300. Terms, $\frac{1}{2}$ down, balance at 5%. Address Mrs. Clara Hess Munroe, 44 Stone street, Oneida, N. Y. Owner will rent.

No. 562—Farm of 70 acres, located 2 miles from Oneida P. O. and railway station, on line of N. Y. C. R. R.; $\frac{3}{4}$ mile from school, 2 miles from churches and milk station, $2\frac{1}{2}$ miles from butter factory and cheese factory. Highways level. Soil, clay and gravel. Acres in meadow, 45; in natural pasture, 12. All tillable. Fruit, 45 young trees, about 35 older trees, also berries and currants. Fences, wire. House, 7 rooms, nearly new. Outbuildings, grain barn, 30x40; shed, 50 feet; granary, 12x16; horse barn, 25x40; hog pen, 16x12. Watered by wells. Occupied by owner. Reason for selling, owner desires to purchase a larger farm. Price, \$6,000. Terms, \$2,100 down, balance on time. Address W. M. Stevens, Verona Station, N. Y.

ONONDAGA COUNTY

Area, 824 square miles. Population, 200,298. Annual precipitation, 46.66 inches. Annual mean temperature, 48.9°. Number of farms, 5,770. County seat, Syracuse.

This county is located in the central part of the state, its northern shores are bounded by Oneida Lake. Lake Skaneateles forms the southwest boundary. It is excellently drained by the Seneca River and Chittenango and Onondaga creeks.

Its surface features are gently undulating in the northern part. In the extreme southern part the surface is generally rough and hills extend in long ridges north and south with narrow valleys between. There is a general slope toward the center of the county into the flats of the "great level." In the southern portion we find a clay and dark sandy loam, in the valleys clay loam, in the central and northern portion a rich sandy and gravelly loam. Among the minerals found in this county are salt, iron ore, limestone and gypsum; the Onondaga limestone being an excellent building stone. Salt is obtained from salt wells in the vicinity of Syracuse. The value of the exported product has at times exceeded a million dollars annually. The county is adapted to general farming, the leading products being corn, 707,385 bushels; oats, 1,127,012 bushels; wheat, 173,499 bushels; barley, 166,274 bushels; buckwheat, 82,839 bushels; potatoes, 1,671,835 bushels; hay and forage, 215,058 tons.

Like many other counties of the state alfalfa can be grown with great success. The total value of farm property is \$37,291,043, an increase of 17.5 per cent. in the past ten years. The average price of improved lands is \$67.58 per acre.

Domestic animals reported as follows: Dairy cows, 36,331; horses, 17,128; swine, 21,453; sheep, 17,284; poultry, 302,764; production of milk was 21,035,070 gallons, which with the products of 55 milk stations and factories sold for \$2,063,923. Numerous transportation lines intersect the county. Syracuse, with a population of 137,249, is a large manufacturing center and is the home of Syracuse University. There are 255 district schools well located throughout the county and 29 agricultural societies. The county has 90 miles of state and county roads and 927 miles of other improved highways. Onondaga is one of the progressive counties of the state.

TOWN OF FABIUS

Population 1,557

No. 563—Farm of 835 acres, located $3\frac{1}{2}$ miles from Fabius P. O., R. D. 1; $3\frac{1}{2}$ miles from railway station at Apulia, on line of D., L. & W. R. R.; 20 rods from school; $2\frac{1}{2}$ miles from churches and butter factory; $3\frac{1}{2}$ miles from two milk stations and condensing plant. Highways, State road half distance. Nearest village, Fabius, population 700, $2\frac{1}{2}$ miles distant, reached by highway. Surface, rolling. Soil, fine clay loam. Acres in meadow, 400; in natural pasture, 200; in timber, 100. hemlock and hard wood, beech and maple; acres tillable, 700. Best adapted to dairying, raising potatoes, cabbage, fine market for all. Peas and corn for canning factory. Fences, wire and rail, fair condition. House, 10 rooms, good condition. Barns, one cow barn, 40x180, for 140 cows; one barn, 60x80, for 60 cows; horse barn, 40x60; silo; all in good condition. Watered, house and barns, by running water; fields, by running water and springs. Occupied by tenant. Reason for selling, owner has retired and wishes to live in city. Price, \$35,000. Terms, $\frac{1}{3}$ cash. Address F. E. Dawley, Fayetteville, N. Y.

TOWN OF MANLIUS

Population 6,016

No. 564—Farm of 160 acres; 2 miles from Fayetteville P. O. and railway station; steam and electric cars; R. D. from Manlius. Highways, good; 1 mile from State road. Soil, clay loam. Acres of alfalfa, 75; acres tillable, 150; acres natural pasture and timber, 10, second growth. Best adapted to alfalfa raising and dairying. Altitude, 750 feet. Fences, fair. 10-room house, in fair condition. Medium barns. Watered by well and running water. Price, \$14,000. Terms, easy. Address F. E. Dawley, Fayetteville, N. Y.

No. 565—Farm of 18 acres, located $1\frac{1}{2}$ miles east from Fayetteville. All alfalfa land. Good house. Fair barn. Some fruit. $\frac{1}{8}$ mile to school, on town road, $\frac{3}{4}$ mile to State road. Price, \$3,000. Address F. E. Dawley, Fayetteville, N. Y.

TOWN OF ONONDAGA

Population, 6,340.

No. 566—Farm of 183 acres; 3 miles from Onondaga P. O., R. D. 2; 7 miles from Syracuse, on line of N. Y. C. R. R. and D. L. & W. R. R.; $\frac{1}{2}$ mile from school; 3 miles from Methodist and Presbyterian churches; $1\frac{1}{2}$ miles from butter factory. Highways, stone and macadamized. Nearest village, Onondaga, population 400, 3 miles distant; nearest city Syracuse, population 138,000, 7 miles distant. Surface of farm, rolling. Altitude, 1,200 feet. Soil, sandy loam. Acres in meadow, 120; in timber, 13; all tillable except woodland. Fruit, 224 choice apple trees. Best adapted to alfalfa, oats, barley, wheat. Fences, woven wire. House, 12 rooms, in good condition. Barn, 30x26, on basement; barn, 26x60; barn, 30x40; barn, 40x45; cowhouse; pigpen; henhouse. Watered, house, by well; barns, by running water; fields, by spring. 50 acres of fine alfalfa. This is good land and milk from this farm sells for 4 cents per quart. Occupied by tenant. Reason for selling, owner is not a farmer. Price, \$11,000. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address D. L. Curtis, and E. P. Boyle, Onondaga, N. Y.

No. 567—Farm of 29 acres, located 4 miles from Syracuse P. O., R. D. 3; 6 miles from railway station at Syracuse, on line of several railways, $\frac{1}{4}$ mile from school; 2 miles from Catholic and Protestant churches; 3 miles from butter factory and milk station. Highways good. Surface of farm, rolling. Altitude about 1,100 feet. Soil, limestone formation.

Acres in meadow, 18; in timber, 3, beech and maple, second growth. Acres tillable, 26. Fruit, about 50 apple trees, 10 plum, 10 cherry, 10 pear, 5 peach and 2 quince trees, also berries, grapes and currants. Best adapted to alfalfa, potatoes, grain and fruit. Fences, mostly new wire, good. House, 8 rooms, good condition. Outbuildings: barn, 32x44 with new cow stable for seven cows, 14x32, new hoghouse, 10x15; new chicken house, 16x20. Watered, house, by well and cistern; barns, by well. This farm is about 7 miles from Onondaga Lake. Occupied by owner. Reason for selling, ill health of owner. Price, \$4,000. Terms, cash. Address Alice L. Amidon, Station A, Syracuse, N. Y., R. D. 3.

TOWN OF POMPEY

Population 2,093

No. 568—Farm of 144 acres; 5 miles from Manlius P. O., R. D. 3, and railway station, on line of Chenango Valley branch of the N. Y. C. R. R.; 40 rods from school; 1½ miles from school and church; 1¼ miles from butter factory and cheese factory; 1½ miles from milk station; 4 miles from condensing plant. Highways, good. Nearest village, Manlius, population 1,500, 5 miles distant, reached by highway; Syracuse, 14 miles distant, reached by trolley from Manlius. Surface, slightly rolling, no hills; lies sloping to southeast. Soil, dark clay and gravel loam. Acres in meadow, 40; in timber, 7 or 8; acres tillable, all except wood lot. 133 apple trees, and a few plum trees. Best adapted to wheat, corn, barley, oats, potatoes, cabbage and alfalfa. Fences, rail and wire, fair condition. House, 30x38, 10 rooms, wing, 12x16, woodhouse. Barns: horse barn and carriage house, 30x40, painted, in good condition; hog and corn house, 12x14; hay, grain and cow barn, 42x68; 2 hay barns, 20x30, 18x30. Watered, house, by well; barns, by wells and springs; fields, by springs. Occupied by tenant. Reason for selling, owner is not a farmer and is in poor health. Price, \$50 per acre. Terms, part cash, part mortgage. Address C. A. Lakin, owner, Manlius, Onondaga Co., N. Y., R. D. 3.

* No. 569—Farm of 100 acres; 6 miles from Manlius P. O., R. D. 3; 6 miles from railway station at Manlius, on line of Chenango Valley R. R.; 1 mile

from school; 2 miles from Presbyterian, Congregational, and Catholic churches, cheese factory, and milk station; 5 miles from condensing plant. Highways, good. Nearest village, Pompey Hill, population 400, 2½ miles distant. Nearest city, Syracuse, population 138,000, 14½ miles distant, reached by highways. Surface of farm, comparatively level. Altitude, 1,450 feet. Soil, clay loam. Acres in meadow, 33; in natural pasture, 25; in timber, 8, beech, maple and hemlock; acres tillable, 36. Fruit, apples, 5 cherry, 4 pear and 6 plum trees. Best adapted to corn, oats, barley, potatoes, cabbage. Fences, rail and wire. House, new, 10 rooms, good condition. Barns, 36x40, 30x28, in fair condition. Watered, house and barns, by springs; fields, by springs. Occupied by owner and tenant. Reason for selling, owner a widow and unable to take charge of farm. Price, \$45 per acre. Terms, part cash, part on mortgage. Address C. A. Lakin, agent, Manlius, N. Y.

No. 570—Farm of 84½ acres; 1 mile from Delphi Falls P. O.; 2 miles from railway station at Delphi Falls, on line of Elmira and Cortland branch of L. V. R. R.; 1 mile from school and churches; 1¼ miles from milk condensing plant. Highways, good. Nearest city, Syracuse, population 138,000, 19 miles distant, reached by rail and highway; nearest villages, Cazenovia, 5 miles distant, and Manlius, 8 miles. Surface of farm, meadow and orchard level, pasture somewhat hilly. Fertile soil with sufficient gravel for drainage. Acres in pasture, 24; in timber, 6, beech and maple; all tillable except pasture and timber land, pasture land could be easily changed into very productive land. Fruit, 73 apple trees, few pear, cherry and plum trees. Best adapted to wheat, corn, alfalfa, oats, buckwheat and millet. Fences, wire, picket and rail, in good condition. House, 14 rooms, main part, 26x36½, wing, 32x32. Outbuildings: cow barn, 30x64; stable, with cement floor, white-washed walls; horse barn, 30x36; shop, 20x24, with attic; shed, 20x50; corn-house, 14x31. Watered, house and barn, by never-failing well and cistern, also piped spring water; fields, by springs. 5 miles from Cazenovia Lake. Reason for selling, to close an estate. There is a sugar bush of 100 trees, also sugar house and small house for the purpose

* Farm is in hands of agent or real estate dealer.

of evaporating fruit. Price, \$5,500. Terms, \$1,000 cash, balance on mortgage. Address Mrs. L. O. Bush, 1615 East Fayette street, Syracuse, N. Y., or Mrs. J. K. Moore, 502 W. 139th street, New York city.

No. 571—Farm of 141 acres, located 5 miles from Manlius P. O., R. D. 3; 3 miles from railway station at Oran, on line of W. S. R. R.; $\frac{3}{4}$ mile from school and church; 1 mile from butter and cheese factory; 1 mile from milk station. Highways, good. Nearest city, Syracuse, population 138,000, 15 miles distant, reached by highway and trolley. Surface, rolling. Soil, dark loam. 10 acres in timber, maple, beech and hemlock, a few pine trees. Acres tillable, 131, 75 to 100 apple trees. Best adapted to hay, alfalfa, wheat, barley, oats, corn, buckwheat. Fences, wire and rail, good condition. Large 12-room house, 2 cellars, good condition. Barns: hay barn, with basement stable, 56x32; large silo; 2 large sheds attached to barn; grain barn, 30x40; granary, 16x20; carriagehouse, 25x35. House watered by well; barns, by well; fields, by spring and creek. Occupied by tenant. Reason for selling, owner too far away to give it personal attention. Bell telephone in house, on direct road; milk route by door. Price, on application. Address F. F. Hubbard, Canastota, N. Y., or Mrs. Frank H. Vail, Manlius, N. Y.

* No. 572—Farm of 94 $\frac{1}{2}$ acres; 9 $\frac{3}{4}$ miles from Manlius, N. Y., P. O., R. D. 3; 9 miles from station of Apulia, on line of the D. L. & W. R. R.; 1 mile from school; 3 $\frac{1}{2}$ miles from Presbyterian, Methodist and Catholic churches; 2 miles from cheese factory; 2 miles from milk station; 4 miles from condensing plant. Highways, good. Nearest village, Fabius, population of 500, 4 miles distant, reached by highway; city of Syracuse, population 138,000, distant 16 miles, by highway. Surface level. Altitude, 1,300 feet. Soil, dark clay loam. 20 acres of meadow; 6 acres of timber, beech and maple; all of farm tillable except the wooded part. Fruit consists of apple, peach, and pear trees and berries. Land adapted to corn, wheat, oats, barley, buckwheat and potatoes. Fences of stone, wire and rail, in good condition. House, 26x32, with wing, 16x20, in good condition. New

basement barn, also barn, 36x50, in fair condition. House watered by well; barn, by springs and well; fields, by springs. Cazenovia Lake is within 4 $\frac{1}{2}$ miles of farm. This farm is located on highway in nice neighborhood, and is in good state of cultivation, producing large crops. Occupied by owner; possession can be given on 30 days' notice. Reason for selling, owner has two farms and cannot care for both to advantage. Price, \$3,500. Terms, part cash and part mortgage. Address owner, Dennis Dwyer, care of C. A. Lakin, agent, Manlius, N. Y.

No. 573—Farm of 114 acres; 1 $\frac{1}{4}$ miles from Manlius P. O., R. D. 2; 1 $\frac{1}{4}$ miles from station of Manlius, on line of N. Y. C. & H. R. R. R.; 1 mile from school; 1 $\frac{1}{4}$ miles from churches; 1 $\frac{1}{2}$ miles from butter factory and condensing plant. First-class stone road. Nearest village, Manlius, population 2,000, distant 1 $\frac{1}{4}$ miles; Syracuse, population 138,000, 10 miles distant, by rail. Surface, rolling to the east. Altitude, about 600 feet. Soil, lime. 25 acres in alfalfa; 20 acres in meadow; 10 acres in natural pasture; 5 acres in timber, pine, hemlock and hard wood; 100 acres tillable. Fruit, about 50 apple trees. Land best adapted to wheat, barley, corn, tobacco, oats, rye and potatoes. Good woven wire fences, and stone walls. House, 30x40, new. New barn, 30x60; horse barn, 30x40; hoghouse, 40x20; henhouse, 120x20. Watered, house, by springs and well; barns, by springs piped; fields, by springs. This farm is all up-to-date, with all new buildings, and is under the best of cultivation. Occupied by owner. Reason for selling, owner has other business. Price on application. Terms, cash. Address M. Murphy, Manlius, N. Y.

No. 574—Farm of 140 acres; 6 miles from Manlius P. O., R. D. 3; 4 $\frac{1}{2}$ miles from railway station at Oran, on line of W. S. R. R.; $\frac{1}{4}$ miles from school and church; $\frac{1}{2}$ mile from butter factory, cheese factory and milk station. Highways, good. Nearest city, Syracuse, population 140,000, 16 miles distant, reached by trolley, rail and highway. Surface, rolling. Soil, clay loam. Acres in meadow, 40; in natural pasture, 15; in timber, 12, maple, beech, oak, hemlock; acres tillable, 130, 40 apple, 12

* Farm is in hands of agent or real estate dealer.

plum, 7 pear trees, grapes. Best adapted to wheat, barley, oats, corn, buckwheat, hay, alfalfa. Fences, wire and rail, good condition. House, large 17 rooms, good condition; Bell telephone. Barns, 32x72, with basement; barn, 25x30, tool-room and henhouse attached. Watered, house by well; barns, by wells; fields, by spring and creek. Occupied by owner. Reason for selling, owner wishes to retire. Price and terms on application. Address Frank H. Vail, Manlius, Onondaga Co., N. Y., R. D. 3.

No. 575—Farm of 198 acres; 6 miles from Manlius P. O., R. D. 3, and station on line of Chenango branch of the N. Y. C. R. R.; 50 rods from school; 1½ miles from churches (Presbyterian and Catholic); 1½ miles from butter factory and cheese factory; 2½ miles from milk station; 5½ miles from condensing plant. Good roads, part stone. Nearest large village, Manlius, population 2,000, distant 6 miles by highway; Pompey Village, is 1½ miles distant; Fabius, 5 miles distant; and the city of Syracuse, 16 miles distant. Surface, rolling. Altitude, 1,400 feet. Soil, clay and limestone. 65 acres of meadow, part alfalfa. 65 acres of natural pasture and woodland, beech, elm, pine, maple and hemlock; 132 acres tillable. Fruit consists of 150 apple trees, 5 pear trees, 4 plum trees, and ¼ acre of raspberries. Land best adapted to corn, rye, wheat, barley, oats, alfalfa, potatoes and cabbage. Fences, posts and wire, in good condition. House, 12 rooms, in good condition. Horse barn, in good condition; 3 other barns, in fair condition, large size; 2 other outbuildings, in fair condition. House has well and cistern water; barns have springs; fields are well watered by springs. Cazenovia Lake is 5 miles distant. Occupied by owner. Reason for selling, owner does not wish to farm any longer. Price, \$6,800. Terms, \$2,800 cash; balance on time. Address Thomas Mullen, Manlius, N. Y., R. D. 3.

No. 576—Farm of 17 acres, located ⅓ mile from Oran P. O.; ¼ mile from railway station at Oran, on line of W. S. R. R.; ⅓ mile from school and church; ¼ mile from milk station; 7 miles from milk condensing plant. Highways good. Nearest large village, Manlius, 3 miles distant, nearest city, Syracuse, 12 miles distant, population about 140,000, reached by rail and highway. Surface

of farm, level. Altitude about 700 feet. Soil, clay loam. Acres in meadow, 13; in natural pasture, 4. All tillable. Fruit, apples, plums, cherries and pears. Adapted to all crops grown in this section. Fences, wire, fair condition. House, 28x46; 12 rooms, with modern improvements. Outbuildings: barn, 26x36, wing, 18x20, first-class condition. Watered by good well. Occupied by owner. Reason for selling, owner has business in west and south. Price, \$4,800. Terms, \$2,000 down, balance on time. The house has bath, hot and cold water, furnace, etc. Address John F. Lewis, Oran, N. Y.

* No. 577—Farm of 103 acres, located 2½ miles from Manlius P. O., and railway station, on line of W. S., and Suburban trolley; ¼ mile from school; 3 miles from High school; 2½ miles from churches; 1½ miles from milk station. Highways, good. Surface of farm, rolling. Soil, gravel loam, limestone. Acres in natural pasture, 5; in timber, 10, second growth maple, hickory and basswood. Acres tillable, 80. Fruit, 50 trees. Best adapted to alfalfa, 29 acres now planted. Fences, good, mostly wire. House, 14 rooms, good condition. Outbuildings: barn, 32x54, nearly new, room for 9 head of stock, concrete floor; wagon house, 26x36. Watered, house and barn by well; fields, by brook. Occupied by owner. Reason for selling, advanced age and ill-health of owner. Price, \$7,000. Terms, \$3,500 down. Address Benedict-Coon Realty Co., 507 Bastable Block, Syracuse, N. Y.

No. 578—Farm of 94 acres, located 2½ miles from Pompey P. O., R. D. 1; 4 miles from railway station at Apulia, on line of D. L. & W. R. R.; 2½ miles from school, butter factory, Catholic and Protestant churches; 4 miles from milk station. Highways, somewhat hilly, but good. Nearest city, Syracuse, 17 miles distant, population about 117,000, reached by rail and highway. Surface of farm, rolling. Altitude about 1,300 feet. Soil, dark loam with clay subsoil. Acres in meadow, 25; in natural pasture, 10; in timber, 12, beech and maple. Acres tillable, 80. Fruit, 565 apple, 180 cherry, 32 pear, 140 plum and 75 peach trees, also currants and raspberries. Best adapted to fruit, corn, grain and cabbage. Fences, wire; fair condition. House, 28x38, with two wings, fine condition. Outbuildings:

barn, 31x108, with three wings; storage barn, 18x22; basement barn, 16x30, good condition. Watered, house by well; barns, by running water; fields by springs. Occupied by tenant. Reason for selling, owner has other business. Price, \$125 per acre. Terms, \$8,000 cash, balance on time at 5%. Address L. L. Woodford, 2367 Midland avenue, Syracuse, N. Y.

TOWN OF TULLY

Population 1,386

No. 579—Farm of 120 acres, located 5 miles from Tully P. O., R. D. 1; 5 miles from railway station at Tully, on line of D. L. & W. R. R.; ½ mile from

school; 5 miles from Catholic and Protestant churches; 4 miles from cheese factory. Highways, somewhat hilly. Surface of farm, ⅔ level, balance hilly. Soil, gravel. Acres in meadow, 40; in natural pasture, 70; in timber, 10, second growth. Acres tillable, 80. Best adapted to cabbage, potatoes and alfalfa. Fences, wire, poor condition. House, 40x50, fair condition. Outbuildings: barn, 36x60, good condition; horse barn, 30x40, poor condition. Watered, house by pump; barns and fields, by springs. Occupied by tenant. Reason for selling, owner lives elsewhere. Price, \$55 per acre. Terms, easy. Address Sam. Ryder, Onondaga Valley, N. Y.

ONTARIO COUNTY

Area, 674 square miles. Population, 52,286. Annual precipitation, 37.99 inches. Annual mean temperature, 49.2°. Number of farms, 4,416. County seat, Canandaigua.

This county is situated in the middle western portion of the state and is one of New York State's strong agricultural counties. It is partly bounded on the east by Seneca Lake and is drained by Flint, Honeoye and Mud Creeks and Canandaigua outlet. The surface is finely diversified with hills, valleys and ridges. The contour is quite irregular in the southwestern part, there being many steep hills and deep valleys. These gradually slope down to ordinary hills in about the center of the county and to gentle undulations and level country in the northeastern part. The county has considerable woodland on which ash, beech, elm, oak and sugar maple are found. The principal rocks which underlie the county are Onondaga limestone and Devonian sandstone. It also has quarries of gypsum, water limestone and salt. The soil is very productive, ranging from a rich gravelly loam, interspersed with clay in the northern and central portions, to a rich clay loam in the valleys of the southern part of the county. All forms of agriculture, orcharding and vineyards included, are successfully carried on in the county. The leading crops reported are corn, 593,169 bushels; oats, 1,365,487 bushels; wheat, 532,138 bushels; barley, 159,584 bushels; rye, 51,700 bushels; dry beans, 113,303 bushels; potatoes, 1,642,755 bushels; hay and forage, 93,364 tons; hops, 282,253 pounds. The total value of all farm property is \$32,593,635, an increase of 37.4 per cent. since the census of 1900. The average value of farm land alone per acre is \$39.53, a gain of \$8.24 during the last decade. The average value of improved land is \$71.42 per acre. Domestic animals reported: Dairy cows, 13,272; horses, 15,620; swine, 17,035; sheep, 67,502; poultry, 243,068; production of milk, 6,410,876 gallons, which valued with its products amounted to \$465,930.

The county is intersected by several trunk lines of railroads, which furnish ample facilities for marketing all products. There are 193 district schools, and Hobart College and William Smith College for Women are located at Geneva. Here also is located the New York State Experiment Station, an institution devoted to scientific agriculture equal to any in the world. Large nurseries are located in this county. The county has 55 miles of state and county roads and 845 miles of improved highways.

TOWN OF CANANDAIGUA

Population 9,405

No. 580—Farm of 185 acres, 8 miles from Canandaigua P. O. and railway station, on line of N. Y. C. R. R.; ½ mile from school and church. Highways good. State road to farm. Nearest

large village, Canandaigua, population about 8,000. Surface, rolling. Soil, gravelly. Acres in meadow, 60; timber, 30, oak, chestnut, maple and pine; acres tillable, 140. Fruit, 150 apple trees, 100 plum, peaches and pears, also 6 acres of raspberries. Best adapted to general farming. Fences, wire, good. Large

house. Large barn, good condition. Watered by well and springs. Farm is 1 mile from Canandaigua Lake. Occupied by tenant. Reason for selling, to settle an estate. Price, \$50 per acre. Terms easy. If preferable, owner will sell only 110 acres, containing the house, the largest barn, a 20x40-foot dryhouse for drying apples or berries, hogpen, henhouse, all the fruit. Price, \$60 per acre. Address J. P. or J. A. McJennett, Canandaigua, N. Y.

TOWN OF FARMINGTON

Population 1,568

No. 581—Farm of 18½ acres, located 4 miles from Victor P. O., R. D. 2; ½ mile from railway station at Farmington, on line of L. V. R. R.; 1 mile from school; 4 miles from church; ½ mile from milk station. Highways, gravel and stone. Nearest large village, Canandaigua, 6 miles distant, reached by rail and highway. Soil, gravel loam. Acres in natural pasture, 4. Acres tillable, 14. Best adapted to corn, potatoes and cabbage. Fences, wire, good condition. House, 20x30, with wing, 10x12. Outbuildings: barn, 30x40. Watered, house and barn by well. Occupied by tenant. Reason for selling, owners live too far away to attend to farm. Price, \$2,400. Terms, ½ down. Address Bert and Sarah Petty, Victor, N. Y. Owners will rent for cash or with option to buy.

TOWN OF GENEVA

Population 1,086

No. 582—Farm of 16¼ acres, located ½ mile from Geneva P. O.; ¾ mile from railway station at Geneva, on line of N. Y. C. & L. V. R. R.; ¼ mile from school; ½ mile from Catholic and Protestant churches. Highways good. Soil, gravelly loam. Acres tillable, 16¼. Best adapted to wheat, oats, barley and fruit. No buildings. Watered by well. Occupied by tenant. Reason for selling, advanced age of owner. For price and terms address Mrs. L. I. Boyd, 12 Castle street, Geneva, N. Y.

No. 583—Farm of 50 acres, located 4 miles from City of Geneva; ¼ mile from railway station at Billsboro, on line of N. Y. C. R. R. (Pa. Div.); 1 mile from school; 4 miles from Catholic and Protestant churches; 4 miles from milk station. Highways, gravel, good condition. Surface of farm, slightly rolling.

Soil, some clay and some sand. All tillable, except 2 acres of timber. Fruit, apples, peaches, pears, plums, cherries, quinces. Best adapted to corn, oats, potatoes, cabbage, wheat, etc. House, 14 rooms, good condition, brick. Also good tenant house. Outbuildings: 2 barns. Watered, house by spring; barns, by well; fields, by spring. Farm has lake front, number of cottage sites, beautiful location. Occupied by owner. Reason for selling, ill health of owner. For price and terms address Mrs. Elizabeth Rupert, Geneva, N. Y., R. D. 1.

TOWN OF MANCHESTER

Population 4,889

No. 584—Farm of 260 acres; 1 mile from Shortsville P. O.; 1 mile from railway station at Shortsville, on line or N. Y. C. & H. R. R. R.; 1 mile from school, Presbyterian, Methodist, Episcopal and Catholic churches and from milk station. Highways, good. Nearest city, Geneva, population 12,000, 16 miles distant, reached by rail or highway. Surface of farm, rolling. Altitude, 650 feet. Soil, loam and limestone. Acres in meadow, 75; in natural pasture, 85; acres tillable, 200. Fruit, 15 acres of apple orchard. Best adapted to corn, wheat, potatoes and vegetables. Fences, wire, in good condition. House, 12 rooms, in good condition. Outbuildings: barn, 36x90; 7-foot basement barn, 40x60; 7-foot basement horse barn, 36x50; icehouse, and hennery. Watered, house, by well; barns, by cistern and well; fields, by spring and small stream. Water pipes connected to the 3 barns by motor power. 6 miles from Canandaigua Lake; 1 mile from Canandaigua outlet. Occupied by owner's brother. Reason for selling, owner is a non-resident. Price, \$90 per acre. Terms easy. Address A. M. Bentley, Clifton Springs, N. Y., care C. M. Bentley.

TOWN OF PHELPS

Population 4,733

No. 585—Farm of 267 acres, located 3½ miles from Geneva P. O., R. D. 3; ¾ mile from railway station at Oak's Corners, on line of Lehigh Valley R. R.; ½ mile from school; 3½ miles from churches, butter factory and milk station. Highways, good. Surface of farm, level just rolling enough to make draining perfect. Soil, sand and dark

gravelly loam. Acres in meadow, 107; in natural pasture, 20; in timber, 20, beech, elm and maple. Acres tillable, 247. Fruit, 100 apple trees and small fruit. Best adapted to wheat and garden truck. Fences, mostly wire, good condition. House, 16 rooms, good condition. Outbuildings: large basement barn; cow barn, capacity, 80 cows; milk house;

house equipped with windmill and kerosene engine, wagon and tool sheds, hog-house; icehouse; smokehouse; large poultry house and other outbuildings. Watered by well. Occupied by owner. Price, \$85 per acre. Terms, will take mortgage for \$16,000 at 5%, balance cash. Address D. S. Nester, Geneva, N. Y.

ORANGE COUNTY

Area, 781 square miles. Population, 116,001. Annual precipitation, 52.5 inches. Annual mean temperature, 49.3°. Number of farms, 3,935. County seat, Goshen.

This county is situated in the southeast part of the state bordering on New Jersey, the eastern line is bounded by the Hudson River and the southwest by the Delaware River. It is intersected by the Wallkill River and also drained by the Shawangunk and Ramapo Rivers.

The surface is mostly long sloping hills diversified with broad fertile valleys, except in the southeastern part and along the western border. These hills do not attain any great height and are arable to their summit. The eastern region of the county comprises a large part of the highlands of the Hudson. The hills are divided by a valley which opens on the Hudson just below Newburgh, the soil of which is of a limestone formation. Directly west of these highlands extending north and south is the broad Wallkill Valley with its rich soil of black dirt and gravelly loam. To the west of this valley lies another chain of hills, the soil of which is mostly a gravelly loam. Granite, limestone and iron ore are found in this locality. The county ships to New York City millions of gallons of milk and the cities of northern New Jersey can be reached from any part of it in two hours. The total value of all farm property is \$35,516,309, an increase of 44.6 per cent. over that shown in the census of 1900. The average price of improved farmland is \$75.28, an increase of 23.52 per cent. over that of ten years ago. The principal crops reported are corn, 451,179 bushels; oats, 114,215 bushels; rye, 48,960 bushels; potatoes, 288,341 bushels; hay and forage, 133,241 tons. Domestic animals reported: Horses, 10,723; swine, 8,838; sheep, 3,904; poultry, 249,061; dairy cows, 45,882; 20,000 head of cattle other than dairy cattle are also reported. There was produced 30,878,586 gallons of milk, which with the product of 68 milk stations and factories sold for \$3,537,640. The county is traversed with main lines and branches of several important railroads, including the New York, Ontario and Western; Pennsylvania; West Shore and Erie. West Point, the United States Military Academy, is located on the shore of the Hudson river in this county. There are 169 district schools, many excellent high schools, several classical schools, Wallkill Academy and Union schools at Middletown and the Newburgh Institute for Boys at Newburgh. The county has 28 agricultural societies, 60 miles of state and county roads and 1,343 miles of improved highways.

TOWN OF BLOOMING GROVE

Population 2,110

No. 586—Farm of 140 acres; 1½ miles from Craigville P. O. and railway station, on line of Erie R. R.; ½ mile from Farmingdale; 5 miles from Goshen. Creamery and schoolhouses near farm. Highways, good. Soil, sandy loam. Acres tillable, 125; timber, 15. Fruit, mostly apples. Occupied by owner. House, 13 rooms, in good condition; also tenant house. Barn, improved cow stable, wagonhouse and icehouse. Watered, house, by well and cistern; fields,

by Cromeline Creek and springs. Farm is suitable for dairy, horses, poultry, grain or for a summer home. Has an especially fine water supply. Price, \$8,500. Terms, ⅔ cash. Name and address of owner, Wm. V. Seamen, Locust Lane Farm, Craigville, N. Y.

TOWN OF CORNWALL

Population 5,690

No. 587—Farm of 3 acres; 1 mile from Cornwall P. O. and railway station, on line of W. S. R. R.; 1 mile from school;

* Farm is in hands of agent or real estate dealer.

$\frac{1}{2}$ mile from churches of all denominations. Highways, good. Nearest city, Newburgh, population 28,000, 5 miles distant by highway and 4 miles by rail; 8-minute ride by train. Surface of farm, level. Soil, good. Acres tillable, 2. Fruit of various kinds. Best adapted to gardening. Fences, in fair condition. House, 10 rooms, in good condition. Barn, in fair condition. Watered, house, by spring. Near Hudson River and Storm King Mountain. A healthful and beautiful location, with fine view. Occupied by owner. Reason for selling, owner wishes to return to city. Price, on application. Address Abram S. Clark, Cornwall Landing, N. Y., Box 21.

No. 588—Farm of $10\frac{1}{2}$ acres; $\frac{1}{4}$ mile from Cornwall-on-Hudson P. O.; $1\frac{1}{2}$ miles from railway station at Cornwall, on line of W. S., or N. Y. O. & W. R. R.; 1 mile from school; $\frac{1}{8}$ mile from Episcopal, Catholic, Presbyterian, Methodist and Baptist churches. Highways, good, State road. Nearest city, Newburgh, population 28,000, 4 miles distant; nearest village, Cornwall, population 2,700, reached by rail or highway on State road to Newburgh. Surface of farm, level. Soil, good and rich. Acres in meadow, 4; acres tillable, 8. Fruit, apples, peaches and pears. Adapted to any crops grown in this climate. House, 12 rooms and cellar, extra coal cellar, heated by hot water, bath, electric lights, in fine condition. Telephone. Barn, 30x40, 2 stories, shed and hennery, in good condition. Watered, house, by village water and pump from well; barn, by well and stream. Many beautiful shade trees on place. $1\frac{1}{2}$ miles from Hudson River and steamboat landing. Near Highlands of the Hudson. Reason for selling, owner desires to move on smaller place. Price, \$6,000. Terms, cash. Address Mrs. Eleanor A. Clark, Clark avenue, Cornwall-on-Hudson, N. Y., Box 491.

No. 589—Farm of 75 acres; $\frac{1}{8}$ mile from Meadow Brook P. O.; $\frac{1}{8}$ mile from railway station at Meadow Brook, on line of O. & W. R. R.; 1 mile from school, Presbyterian and Methodist churches; $\frac{1}{8}$ mile from milk station; 5 miles from condensing plant. Highways, macadamized roads. Nearest city, Newburgh, population 28,000, 5 miles distant, reached by rail or highway. Surface of farm, slightly rolling. Soil, fertile. Acres in meadow, 45; in

natural pasture, 20; in timber, 6; oak, hickory and chestnut; acres tillable, 40. Best adapted to corn, wheat, rye, oats and potatoes, or for a fruit and market gardening farm. Fences, stone. House, 30x50, in good condition. Barn, 28x40, in good condition. Watered, house and barn, by well; fields, by springs and stream. 3 miles from Ramsdale Lake. Occupied by owner. Reason for selling, owner engaged in other business. Price, \$7,000. Terms easy. Address Charles S. Satterly, Meadow Brook, Orange Co., N. Y.

TOWN OF CRAWFORD

Population 1,659

No. 590—Farm of 160 acres, located $1\frac{1}{2}$ miles from Thompson Ridge P. O. and railway station, on branch line of Erie R. R.; $1\frac{1}{4}$ miles from school, Protestant and Catholic churches; 3 miles from butter factory, cheese factory and milk condensing plant; $1\frac{1}{2}$ miles from milk station. Highways, good. Nearest city, Middletown, 11 miles distant, population about 15,000, reached by rail and highway. Surface of farm, part level, part rolling. Altitude about 1,000 feet. Soil, sandy loam, gravelly loam and black dirt. Acres in meadow, 30; in natural pasture, 30; in timber, 20, chestnut and white oak. Acres tillable, 80. Fruit, 60 apple, 8 pear, 8 peach, 6 plum trees, also several grape vines. Best adapted to corn, potatoes, beets, oats, wheat, rye and hay. Fences, mostly wire, good condition. House, 32x30, 2 stories, large attic, addition, 18x24, 13 rooms. Outbuildings: barn, 132x24, addition, 24x12; wagon house, 24x24; carriage house, 20x14; large hen house; wood house, pig pen, ice house; milk house and smoke house. Watered, house and barn by never-failing well; fields, by springs and brooks. Occupied by owner and tenant. Reason for selling, scarcity of help. Price, \$8,500. Terms, \$5,000 down, balance on mortgage. Address Robt. C. Gillespie, Thompson Ridge, N. Y.

TOWN OF GREENVILLE

Population 644

No. 591—Farm of 106 acres, 3 miles from Westtown P. O. and railway station, on line of N. Y. S. & W. R. R.; State road. Good loam soil. Acres in meadow, 40; acres tillable, 100; acres natural pasture, 60; acres timber, 1, oak. 35 apple and 10 pear trees. Oc-

cupied by owner. Altitude, 965 feet. Fences, wire and stone, in good condition. 10-room house, in good condition. Barn, 30x136, in good condition; has stable for 40 cows and 9 horses, with a large wagonhouse; has running water, with individual buckets for cows. Watered by well, cistern and spring. This is one of the best dairy farms in Orange County and is within easy reach of a good milk market over a State road. Price, \$5,000. Terms, 30% cash, balance on bond and mortgage. Name and address of owner, J. W. Eaton, Westtown, N. Y.

No. 592—Farm of 10 acres, 2 miles from Minisink P. O.; $3\frac{3}{4}$ miles from Westtown railway station, on line of N. Y. S. & W. R. R.; State road. Good loam soil. Acres timber, 1, hickory. 100 apple and 10 pear trees. Best adapted to corn, rye and hay. Occupied by owner. Altitude, 1,095 feet. Fences, wire and stone, in good condition. Large 14-room house, cost \$8,000, good condition; 1 barn, 42x42; carriagehouse, 30x36. This farm could keep a dairy of 5 cows and team. State road to railroad. Price, \$3,000. Terms, 30% cash, balance on mortgage. Name and address of owner, J. W. Eaton, Westtown, N. Y.

No. 593—Farm of 85 acres; 2 miles from Minisink P. O.; $4\frac{1}{2}$ miles from Westtown railway station, on line of N. Y. S. & W. R. R.; $\frac{1}{2}$ mile from school; $\frac{1}{2}$ mile from State road. Loam soil. Acres in meadow, 30; acres tillable, 60; acres natural pasture, 55; acres timber, $\frac{1}{2}$, chestnut and maple. 50 apple, 10 cherry trees, also some pears and plums. Best adapted to corn, oats and hay. Farm contains about 25 acres of black dirt, suitable for lettuce, onions or celery. Occupied by owner. Altitude, 1,000 feet. Fences, stone and wire, in good condition. 6-room house, stone in good condition. Barn, 30x80. This would make a good dairy or poultry farm. Watered by springs, well and running stream. Price, \$3,500. Terms, 40% cash, balance on mortgage. Name and address of owner, J. W. Eaton, Westtown, N. Y.

TOWN OF MONTGOMERY

Population 7,439

No. 594—Farm of 260 acres, located $2\frac{1}{2}$ miles from Montgomery P. O., R. D.

1, and railway station, on line of Erie R. R.; $2\frac{1}{2}$ miles from milk station, Catholic and Protestant churches; 1 mile from school. Highways in good condition. Nearest large village, Goshen, 6 miles distant, population about 5,000, nearest city, Middletown, 9 miles distant, population about 15,000, reached by rail and highway. Surface of farm, rolling. Soil, loam. Acres in meadow, 160; in natural pasture, 50; in timber, 50, chestnut, hickory and elm, hardwood. All tillable, except woodland. Fruit, apples, pears and plums, about 80 trees. Best adapted to corn, wheat, oats, rye and potatoes. Fences, stone, wire and wood, good condition. House, large 10 rooms, good condition. Outbuildings: cow barn, horse barn, icehouse and other necessary buildings, good condition. Watered, house, by pump and well; barns, by running water; fields, by brooks, pond and river. Wallkill river borders on about $\frac{2}{3}$ of farm. Occupied by owner. Reason for selling, owner has other business. Price, \$23,000. Terms, \$10,000 cash, balance on mortgage. Address Herman P. Felsing, Eagle Hotel, Walden, N. Y.

* No. 595—Farm of 34 acres, located $\frac{1}{2}$ mile from Montgomery P. O., R. D. 3; $\frac{3}{4}$ mile from railway station at Montgomery, on line of Erie R. R.; $\frac{1}{16}$ of mile from school; $\frac{1}{2}$ mile from Catholic and Protestant churches; 1 mile from milk station. Highways in excellent condition. Surface of farm, rolling. Soil, loam. Acres in meadow, 18; in natural pasture, 16. Acres tillable, 20. Adapted to any crops grown in this section. Fences, rail and wire, good condition. No buildings. Reason for selling, owner has too much land. Price, \$1,200. Terms, 60% cash, balance on mortgage. Address J. M. Wilkin, agent, Montgomery, N. Y.

TOWN OF MT. HOPE

Population 1,786

No. 596—Farm of 140 acres; 2 miles from Guymard P. O. and railway station, on line of E. R. R.; $\frac{3}{4}$ mile from school; 4 miles from churches; 2 miles from milk station; 4 miles from milk condensing plant. Highways, good. Nearest large village, Otisville, population 1,000, reached by highway, 4 miles distant. Surface, level. Soil, gravel. Acres in meadow, 50; natural pasture,

* Farm is in hands of agent or real estate dealer.

40; timber, 6, oak and chestnut; acres tillable, 44. Fruit, about 50 apple trees. Best adapted to wheat, corn, rye, oats and buckwheat. Large house and small tenant house, good condition. Outbuildings: barn, 28x80, with addition, 16x30; inclosed shed, 15x60, in fair condition; wagon and corn house. Watered by well, springs and running water. Occupied by owner. This farm will keep from 25 to 30 cows; well watered; adapted to fruit raising; can be worked by machinery. Price, \$7,000. Terms, $\frac{1}{2}$ cash. Address W. W. Clark, Otisville, N. Y.

No. 597—Farm of 75 acres; 2 miles from Guymard P. O. and railway station, on line of Erie R. R.; $\frac{3}{4}$ mile from school; 4 miles from churches; 2 miles from milk station; 4 miles from milk condensing plant. Highways, good. Nearest large village, Otisville, population about 1,000, 4 miles distant, reached by highway. Surface, level. Soil, gravel. Acres in meadow, 40; natural pasture, 15; acres tillable, 20. Fruit, apples. Best adapted to wheat, corn, rye, oats and buckwheat. Fences, stone wall, fair condition. House, large; also tenant house, good condition. Outbuildings: barn, 28x80, addition, 16x20, shed, 15x60, wagon and cornhouse, fair condition. Watered by well and springs. Occupied by owner. Reason for selling, owner has 2 farms and cannot attend to both of them. Price, \$5,500. Terms, $\frac{1}{2}$ cash. Address W. W. Clark, Otisville, N. Y.

No. 598—Farm of 113 acres, located 3 miles from Otisville P. O. and railway station, on line of Erie R. R.; 1 mile from school and Protestant church; 3 miles from milk station. Highways, good. Nearest city, Middletown, 7 miles distant, population about 15,000, reached by highway. Surface of farm, slightly rolling. Altitude, 900 feet. Soil, some gravel and clay loam, a few acres of black dirt. Acres in meadow, 25; in natural pasture, 35; in timber, 13, oak and chestnut. Acres tillable, 40. Fruit, 40 apple trees, a few plums, pears and cherries. Best adapted to dairying, grain and vegetables. Fences, stone and wire. House, 12 rooms, good condition. Outbuildings: barn, for 20 cows, 4 horses and storage for hay, grain, etc., wagon-house, henhouse and tool shed. Watered, house by well, barn by trough; fields, by springs and brook. Ice pond near barn. Occupied by tenant. Reason for selling, owner has other farms

and cannot attend to so many. Price, \$5,500. Terms, $\frac{1}{2}$ down, balance on bond and mortgage. Address Albert Manning, Otisville, N. Y. Owner will rent for cash or with option to buy.

TOWN OF NEW WINDSOR

Population 2,667

No. 599—Farm of 10 acres, overlooking Washington Lake. Elegant house, 12 rooms. Barn and 2 henneries. 400 fruit trees. Nice lawn and shade trees. 2 miles from Newburgh. State road. Price, \$5,000. Address Geo. C. Topping, Newburgh, N. Y., R. D. 4.

No. 600—Farm of 108 $\frac{1}{2}$ acres; 1 $\frac{1}{2}$ miles from New Milford P. O.; 1 mile from New Milford station. Highways, good. Limestone soil. Acres in meadow, 20; tillable, 60; natural pasture, 20; timber, 8 $\frac{1}{2}$, white oak, hickory and sugar maple. 5 acres apple orchard, 1,000 peach trees, 2 years old; also 100 three-year-old apple trees and small fruits for family use. Adapted to general farming. Occupied by owner. Altitude, 550 feet. Fences, stone, wire and wood, in good condition. House, 30x36, in good condition; new tenant house, 5 rooms. Horse barn, 24x30; cow barn, 28x65; shed, 12x100; barns all in good condition; henhouse, 12x36; icehouse, 16x16; granary, 24x20; incubator house, 12x16. Watered by well, cistern and hydraulic ram from spring. One of the best trout streams in the country runs through this farm. Price, \$20,000. Terms, cash. Name and address of owner, Jacob Drew, Warwick, N. Y.

TOWN OF WARWICK

Population 7,141

No. 601—Farm of 100 acres; 2 miles from Greenwood Lake P. O. and station, on line of Erie R. R.; 2 miles from school and Protestant churches. All milk can be sold to hotels in vicinity. Highways, good. Nearest village, Greenwood Lake, population 200, 2 miles distant. Surface, fairly level. Soil, loam and gravel. 30 acres in meadow; 50 acres of natural pasture; 20 acres of timber; 30 acres tillable. 50 apple, 20 pear and 10 plum trees. Adapted to hay crops. Fences, in fair condition. House, 32x30, in good condition. Also tenant house. Church 26x36, which could be made into a house.

Barn, 30x60; wagonhouse, 28x30, shop attached; icehouse, 20x20; hoghouse, 12x14; good stone smokehouse, woodhouse. The buildings on this farm are nearly new. House has well water; barns have brook near, and fields are well watered.

Greenwood Lake is 5 minutes' walk from farm. Occupied by tenant. Reason for selling, owner going into other business. Price, \$4,000. Terms, $\frac{1}{2}$ cash and $\frac{1}{2}$ remain on mortgage. Address James Hall, Greenwood Lake, N. Y.

ORLEANS COUNTY

Area, 399 square miles. Population, 32,000. Annual precipitation, 32.31 inches. Annual mean temperature, 48.9°. Number of farms, 2,780. County seat, Albion.

This county is located in the western part of the state, on Lake Ontario, which forms its northern boundary.

The surface of the county is generally level with gentle undulations to the south. A strip of land about eight miles in width extending inland consists of sandy gravelly loam, then comes a strip about four miles in width with elevation of about 200 feet, the soil of which is a black muck and gravelly loam. The southern part of the county consists of another strip of land about six miles in width, elevation about 500 feet, the soil of which consists chiefly of clay, muck and limestone. On these soils are grown enormous quantities of vegetables of every variety and the apple, peach, pear, plum and quince orchards are very extensive and are kept in the most excellent condition. The county contains valuable quarries of Medina sandstone and Niagara limestone, both of which are choice building stone. There has been recently published by Cornell University a bulletin giving an orchard survey of this county and of Wayne and Tompkins Counties, which can be had upon application. In the production of dry beans, Orleans County leads every other county in the United States, the yield in 1910 being 291,191 bushels. Some of the leading crops in the same year were corn, 375,583 bushels; oats, 584,442 bushels; wheat, 527,634 bushels; barley, 56,496 bushels; potatoes, 571,608 bushels; hay and forage, 57,749 tons. The total valuation of farm property is \$26,551,582, an increase of 70.3 per cent. over that of 1900. The average value of improved land is \$96 per acre. The average price per acre of farm land alone is \$63 per acre. This enormous advance in land values throughout the county has been caused chiefly by the rapid development of the fruit industry, which has grown to large proportions; Orleans, Niagara, Monroe and Wayne Counties being perhaps the chief contributors to the apple product of New York State for 1912, which totals 6,900,000 barrels.

Domestic animals reported are dairy cows, 7,247; horses, 10,924; swine, 10,960; sheep, 59,766; poultry, 134,740; milk production, 3,268,397 gallons, all of which except that used by one creamery was shipped to Niagara Falls and Buffalo, for which the farmers received \$195,186.

The county is traversed from east to west by the Erie canal, New York Central and Hudson River Railroad and Rome, Watertown and Ogdensburgh Railroad, also all trunk lines. The county has 134 district schools with a union school system and academies at Albion and Medina. There are 42 miles of state and county roads and 546 miles of other improved highways. The agricultural organizations of the county are 1 Pomona grange, 10 subordinate granges, a county agricultural society and county fruit growers' association.

TOWN OF BARRE

Population 1,812

No. 602—Farm of 216 acres, located 5 miles from railway station at Elba, on line of W. S. R. R.; $1\frac{1}{2}$ miles to Barre Center, a small country village, containing grocery, church, blacksmith shop, etc. Nearest large village, Albion, 6 miles distant. Surface of farm, level. Soil,

clay loam and muck; 90 acres of muck on farm. Acres tillable, 187. Fences, woven wire, good. House, built of stone, good repair. Outbuildings: barn, 30x74, with sheep shed attached; hen and hoghouse, 20x50; horse barn and tool shed. Fruit, 16 acres of pears; 4 acres of apples; also plums; grapes and peaches. Occupied by owner. For price and terms address G. A. Parsons, Albion, N. Y.

TOWN OF CLARENDON

Population 1,335

*No. 603—Farm of 147 acres, located 6 miles from Holley P. O. and railway station, on line of N. Y. C. R. R.; $\frac{1}{4}$ mile from school; 2 miles from Protestant church; 6 miles from cheese factory; 6 miles from Village of Brockport. Surface of farm, rolling. Soil, limestone. Acres in meadow, 30; in natural pasture, 40; in timber, 15, elm, maple and ash. Acres tillable, 125. Fruit, 12 acres of apples. Best adapted to beans, wheat, potatoes and cabbage. Fences in fair condition. House, 8 rooms, good condition. Outbuildings: large basement barn. Watered, house and barn by well; fields, by spring. Occupied by owner's son. Reason for selling, owner has other business. Price, \$13,000. Terms \$6,000 down, balance to suit purchaser. Address W. C. Hill, agent, Holley, N. Y.

*No. 604—Farm of 96 acres, located 4 miles from Holley P. O., R. D. and railway station, on line of N. Y. C. R. R.; $\frac{1}{8}$ mile from school; $1\frac{1}{2}$ miles from Protestant churches; 4 miles from butter factory; cheese factory and milk station. Highways, State road. Surface of farm, rolling. Soil, loam. Acres in meadow, 10; in natural pasture, 10; in timber, 10; hard maple and elm. Acres tillable, 80. Fruit, 6 acres of apples in bearing. Best adapted to beans, wheat and hay. Fences, wire good condition. House, 10 rooms. Outbuildings: large barns with basement. Watered, house and barn by well; fields, by spring. Occupied by owner. Reason for selling, owner desires to retire from business. Price, \$11,000. Terms, reasonable payment down, balance on long time. Address W. C. Hill, agent, Holley, N. Y.

TOWN OF MURRAY

Population 3,969

*No. 605—Farm of 104 acres, located $1\frac{1}{2}$ miles from Fancher P. O. and railway station, on line of N. Y. C. and B. L. & R. R. R.; $\frac{1}{4}$ mile from school; $1\frac{1}{2}$ miles from Protestant churches; 3 miles from butter factory and cheese factory; $1\frac{1}{2}$ miles from milk station.

Surface of farm, level. Soil, black loam. Acres in meadow, 15; in natural pasture, 15. Fruit, 12 acres of apples and peaches. Best adapted to beans, cabbage and potatoes. Fences, fair condition. House in poor condition. Outbuildings in good condition. Watered, house and barn, by well; fields, by living stream. Occupied by tenant. Reason for selling, owner lives too far away to attend to farm. Price, \$8,320. Terms, \$3,000 cash, balance on long time. Address W. C. Hill, agent, Holley, N. Y. Owner will rent for cash, on shares or with option to buy.

TOWN OF SHELBY

Population 3,945

*No. 606—Farm of 75 acres, located 4 miles from Medina P. O., R. D. 5 and railway station, on line of N. Y. C. R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{2}$ miles from Protestant churches. Surface of farm, slightly rolling. Soil, sandy loam and gravel. Fruit, 16 acres of apples. Adapted to all kinds of grain, vegetables and hay. Fences, wire, fair condition. House, 15 rooms, good condition. Outbuilding: basement barn, 30x60; fair condition. Watered, house and barn by well; fields, by well. Occupied by owner. Reason for selling, to close an estate. Price, \$8,000. Address Stafford Real Estate Agency, Medina, N. Y.

*No. 607—Farm of $167\frac{1}{2}$ acres, located 4 miles from Medina P. O., R. D. 5 and railway station, on line of N. Y. C. R. R.; $\frac{1}{4}$ mile from school; 2 miles from Protestant churches. Surface of farm, slightly rolling. Soil, gravel and sandy loam. Acres in timber, 20, hard and soft wood. Acres tillable, 145. Fruit, apples and pears. Adapted to all kinds of grain and hay. Fences, wire, fair condition. House, fair condition, also tenant house. Outbuildings: 2 sets of barns, fair condition; hog pen; corn crib and carriage house. Watered, house, by well; barn, by creek; fields, by wells and springs. Oak Orchard Creek borders on west side of farm. Occupied by owner. Reason for selling, ill health of owner. Price, \$8,500. Terms, easy. Address Stafford Real Estate Agency, Medina, N. Y.

*Farm is in hands of agent or real estate dealer.

OSWEGO COUNTY

Area, 962 square miles. Population, 71,664. Annual precipitation, 41.36 inches. Annual mean temperature, 47.3°. Number of farms, 6,319. County seat, Oswego.

This county is located at the east end of Lake Ontario, Oneida Lake and Oneida River forming the southern boundary. It is intersected by the Oswego and Salmon Rivers.

The surface features along Lake Ontario are comparatively level with a soil consisting of a gravelly loam. Farther back in the region drained by the Oswego River the soil is mostly clay loam. The surface is undulating in the eastern part of the county and the soil is a gravelly loam with many scattered beds of muck. In the southern part the surface is rolling, declining to a flat level tract in the region of Oneida Lake, the soil being sandy but fertile. Silurian sandstone, an excellent material for building purposes, constitutes the rock found next to the surface of the soil.

All fruits flourish and the county is noted for its excellent quality of small fruits and apples. During the berry season of strawberries and raspberries, iced berry cars are run daily to New York City, Boston and Philadelphia. Some of the principal crops are corn, 491,706 bushels; oats, 504,314 bushels; buckwheat, 71,394 bushels; potatoes, 997,874 bushels; hay and forage, 166,002 tons. The value of all farm property is \$23,804,151; an increase of 21.5 per cent. during the past ten years. The average price of land only in this county is \$18.27, and the average price of improved land is \$35.97. There are many cheap farms with old orchards that have been planted for fifty and sixty years but have never had any proper treatment that with the application of modern methods of care and marketing would yield abundantly. A notable instance of this has recently occurred. One farm of one hundred acres containing an orchard of ten acres, trees planted 54 years, was bought for \$7.50 per acre, and the orchard produced under the first year's cultivation, fertilization, pruning and spraying about \$4,000 worth of apples. The entire farm has been cleared of brush, briars and other growths and set out to orchard.

Domestic animals are reported as follows: dairy cows, 40,744; horses, 13,529; swine, 13,848; sheep, 6,009; poultry, 251,022; milk production, 20,101,582 gallons. Amount received from the products of 85 milk stations and factories, \$1,888,709.

The county is traversed in various directions by the R. W. & O. N. Y., O. & W., D. L. & W. railroads and by the Oswego canal together with trolley lines running through the entire length of the county from Syracuse to Oswego. A state normal and training school is located in Oswego and the largest cornstarch factory in the country has its plant in that city, the output being about 33 tons per day. Wheat and buckwheat flour mills are also located there. There are 273 district schools, well located throughout the county, 58 miles of state and county roads and 1,195 miles of graded and improved highways. There are 66 agricultural organizations in the county, which indicate that the farmers are alert as to the best methods of agriculture.

TOWN OF ALBION

Population 1,472

No. 608—Farm of 113 acres; 1¾ miles from Altmar P. O. and railway station, on line of R. W. & O. R. R.; 1¾ miles from schools and churches. Highways good. Surface, rolling and level. Soil, rich, stony loam. Acres in meadow, 20; natural pasture, 30; timber, 25, cherry, hemlock, ash, maple and birch; acres tillable, 80. Fruit, 20 apple trees. Best adapted to corn, potatoes, oats, rye, apples and small fruits of all kinds. Fences, stone and wire, good condition. House, 28x22, square roof, addition, 24x16, good condition. Outbuildings: barn, 30x40; stable, 40x14; horse barn,

26x36; henhouse, 50x14, cement floor, modern. Watered, house, by well; fields, by creeks and several springs. Lake Ontario 12 miles distant, Salmon River, 1¾ miles distant. Buildings are in center of farm, surrounded by 23 fine maple trees. Reason for selling, poor health of owner. Price, \$3,500. Terms, cash or part payment. Address Thomas Riley, Altmar, N. Y.

TOWN OF BOYLSTON

Population 667

No. 609—Farm of 74 acres, located 3 miles from Lacona P. O., R. D. No. 2 and railway station, on line of R. W. & O. Railway, 1⅛ mile from school and

Methodist Church, $\frac{1}{4}$ mile from cheese factory and butter factory, 3 miles from milk station. Surface of farm rolling. Soil, gravel. Acres in meadow, 30; in natural pasture, 38; in timber, 6; maple and birch. Acres tillable, 40. Fruit, 12 apple, 1 pear, 1 plum and 6 cherry trees. Best adapted to oats, corn, potatoes and hay. Fences, stone wall and wire, good condition. House, 20x24, good condition. Outbuildings: barn, 30x40, underground stables. Watered, house by well, fields by spring and brook. This farm is 10 miles from Lake Ontario. Occupied by owner. Reason for selling, owner has too much land. Price \$1,850. Terms, $\frac{1}{2}$ down. Address Bert H. Rowe, Lacona, N. Y. Owner will rent for cash, on shares or with option to buy.

No. 610—Farm of 100 acres, located 7 miles from Lacona P. O., R. D. No. 1, and railway station, on line of R., W. & O. R. R., 50 rods from school, $\frac{1}{2}$ mile from Catholic Church, $2\frac{1}{2}$ miles from butter factory and cheese factory, 7 miles from milk station and milk condensing plant. Highways good. Surface of farm level. Altitude, 1,200 ft. Soil, black loam. Acres in meadow, 25; in natural pasture, 25; in timber, 50, beech, birch and maple. Acres tillable, 40. Best adapted to potatoes, oats, buckwheat and corn. Fences, partly wire, good condition. House, 20x26, 2 stories. Outbuildings: barn, 40x60, good condition. Watered, house by well, barns and fields by streams. Unoccupied. Reason for selling, ill health of owner. Price, \$1,000. Terms easy. Address Jos. Beech, Lacona, N. Y., R. D. No 1. Owner will rent for cash or with option to buy.

No. 611—Farm of 100 acres, located 9 miles from Lacona P. O., R. D. 1 and railway station, on line of R. W. & O. R. R., 1 mile from school, $\frac{3}{4}$ mile from Catholic Church, 9 miles from butter factory and milk station, 3 miles from cheese factory, 13 miles from milk condensing plant. Highways good. Surface of farm level. Altitude about 1,300 ft. Soil, black loam. Acres in meadow, 30; in natural pasture, 30; in timber, 40, spruce, beech, birch and maple. Acres tillable, 45. Fruit, a few apple trees. Best adapted to potatoes, corn and oats. Fences, wire, good condition. House, 18x24, $1\frac{1}{2}$ stories with wing 18x26, fair condition. Outbuildings: barn, 30x40 with linter, good condition. Watered, house and barn by well, fields by small stream. Occupied by tenant. Reason for selling, owner has

another farm. Price \$900. Terms, reasonable payment down, balance on time. Address John O'Reilly, Lacona, N. Y., R. D. 3.

TOWN OF CONSTANTIA

Population 2,023

No. 612—Farm of 200 acres; $1\frac{1}{4}$ miles from Bernhards Bay P. O., R. D. 1 and railway station, on line of N. Y. O. & W. R. R.; $\frac{1}{4}$ mile from school, churches and milk station. Highways, good. Nearest village, Cleveland, population about 1,000, 3 miles distant. Reached by highway. Surface, level. Soil, sandy. Acres in meadow, 20; in natural pasture, 60; in timber, 100, second growth of birch, maple, hemlock, spruce and pine; acres tillable, 100. Few apple trees. $2\frac{1}{2}$ acres of strawberries. Best adapted to strawberries. Fences, barbed wire, in good condition. 12-room house, new slate roof in good condition. Barns, 40x65, 26x36, 24x32, in fine condition; smokehouse and henhouse, also new henhouse, 13x63. Watered, spring water in house; barns watered by wells; good stream flows through this farm. $1\frac{1}{4}$ miles from Oneida Lake. Occupied by owner. Reason for selling, old age of owner. Price, \$4,500. Terms, $\frac{1}{2}$ cash, easy payments for balance. Address Herbert Cook, Bernhards Bay, N. Y., R. D. 1.

No. 613—Farm of 51 acres, located 3 miles from Constantia P. O. and railway station, on line of N. Y. O. & W. R. R., 3 miles from canning factory and chair factory, $\frac{3}{4}$ mile from school, church, grist mill, store etc., 3 miles to cheese factory and creamery. Highways in good condition. Surface of farm level. Soil, sandy loam. Acres in meadow, 10; in pasture, 25; balance on a creek flat, muck land adapted to truck gardening. House, 8 rooms, good condition. Outbuildings: barn, 30x40, corn house, hog house and hen house. Watered by spring. Price, \$1,100. Terms, \$400 down, balance on easy payments. Address O. H. Smith, Constantia, N. Y.

TOWN OF HANNIBAL

Population 2,148

No. 614—Farm of 52 acres; 3 miles from Hannibal P. O. and railway stations of Hannibal and Fulton, on line of D. L. & W. R. R., and N. Y. C. & H. R. R. R.; near school and churches; 3 miles from butter factory, milk sta-

tion and condensing plant. Highways, good. Nearest city, Fulton, 4 miles distant; nearest village, Hannibal, 3 miles distant, reached by highway; Oswego, 10 miles distant; Syracuse, 18 miles distant. Surface, partly level and partly rolling. Soil, very good. All of this farm is tillable except about 6 acres of timber, consisting of fine cedar, which is quite valuable. The land is adapted to the raising of all grain crops. Fences are about $\frac{1}{2}$ new. House has been unoccupied for some years and is dilapidated. Good barn with basement. House has very fine well water; barn has well near; fields have a stream running through them. A beautiful lake is about 2 miles away, and the Oswego River and Barge Canal at Fulton are 4 miles away. With proper care, this would make an excellent farm; has been assessed higher than any other in locality, and once sold for \$3,000; is well placed and well watered. The city of Fulton offers every advantage and the Barge Canal promises great things for the future. When this farm had good care, the results were most satisfactory, and the fruit raised was of the finest. The farm is unoccupied. Reason for selling, distance of owner from property. Price, \$1,200. Terms, cash. Address Mrs. Letitia Cornell, care of Wm. A. Cornell, 27 William St., New York City, N. Y.

TOWN OF MEXICO

Population 2,982

*No. 615—Farm of 55 acres; 2 miles from railway station at Mexico, on line of N. Y. C. & H. R. R. R.; 2 miles from school, churches, butter factory and cheese factory. Highways, good. Nearest village, Mexico, population 1,500, 2 miles distant, reached by highway. Surface of farm, rolling. Soil, clay and loam. Acres tillable, 50. Best adapted to timothy, clover, oats and grain. Fences, good. House, 10 rooms, large cellar, in good repair. Barn, 36x26, with ell, 26x28; basement stable, 24x34; silo, 10x25. Watered, house and barn, by well; fields, by springs. Near Lake Ontario. Occupied by owner. Reason for selling, owner wishes to engage in other business. Owner will leave 10 cows and farm tools. Price, \$4,000. Terms, \$1,500 cash, balance at 5%. Address J. H. McLearn, agent, Gouverneur, N. Y.

No. 616—Farm of 136 acres, located 2 miles from Mapleview P. O., R. D. 1, 2 miles from railway station at Parish

or Maple View, on line on R. W. & O. and N. Y. C. R. R., $\frac{3}{8}$ mile from school, 2 miles from Protestant Churches, $1\frac{3}{4}$ miles from butter factory and cheese factory, 2 miles from milk station. Highways good. Surface of farm, rolling and level. Soil, clay and gravel loam. Acres in meadow, 60, in natural pasture, 60, in timber, 16, hemlock and hard wood. Acres tillable, 120. Fruit, mostly apples. Best adapted to grass, corn, potatoes and cabbage. Fences, mostly wire, good condition. House, large, 10 rooms, good condition. Outbuildings, new barns and outbuildings, barn 32x61 with cement basement, room for 40 cows. Watered, house and barns by wells, fields by streams. Occupied by owner. Reason for selling, owner does not have time to attend to farm. Price \$5,000. Terms, small payment down, balance on mortgage. Address E. M. Wightman, Constantia, N. Y. Owner will rent for cash, on shares or with option to buy.

TOWN OF RICHLAND

Population 3,791

No. 617—Farm of 78 acres; $1\frac{1}{2}$ miles from Pulaski, on the R. W. & O. R. R.; R. D. 1 from Pulaski; near good schools and cheese factory. Highways, State road from Syracuse to Watertown. Soil, gravelly loam. Acres in meadow, 25; tillable, 78; natural pasture, 25; no timber. Adapted to fruit, grass, oats, corn and potatoes. Occupied by tenant. Altitude, high and healthful. Fences, wire, in fair condition. House, 25x25, in fair condition. Barn, 50x26, with wing, 30x40; hoghouse, 24x15; henhouse; in fair condition. Watered, house, by well; fields, by stream. On telephone line. Reason for selling, owner cannot work farm. Price, \$4,000. Terms, \$1,000 down, remainder on mortgage. Owner will rent for cash, tenant to find all the stock. Name and address of owner, Sarah E. Hadley, administratrix, Pulaski, N. Y.

TOWN OF SANDY CREEK

Population 2,106

No. 618—Farm of 160 acres; 1 mile from Lacona; $\frac{1}{2}$ mile from Sandy Creek P. O. State road between Watertown and Syracuse. Soil, gravelly loam. Good apple orchard and other fruit. Twenty acres of timber. Two houses, in good condition. Barn, with basement, 36x60; barn, 30x40; barn, 26x30;

2 new poultryhouses; all nearly new. Watered by springs and streams. Fences, in fine condition. Maple sugar bush, 400 trees. Will be sold for less than the buildings cost. Owner will sell stock and machinery if desired. Price, \$7,500. Terms, easy. Name and address of owner, James F. Graham, Sandy Creek, N. Y. Owner will rent.

No. 619—Farm of 123 acres, 1 mile from Sandy Creek P. O. and station on R. W. & O. R. R.; R. D. 1 from Sandy Creek. Soil, gravelly loam. Acres in meadow, 50; tillable, 80; natural pasture, 10, timber, 40, beech and maple, large growth. Fruit, 6 acres of orchard, pears and grapes. Best adapted to fruit, grass, oats, corn, potatoes, etc. Unoccupied. Fences, wire, in good condition. No dwelling-house. Barn, in fair condition. Watered, barn, by well; fields, by stream. Two miles from Lake Ontario. The timber on this farm is worth the price asked for the farm. This farm would make a delightful country home for a city family. Reason for selling, death of former owner. Price, \$4,000. Terms, $\frac{1}{2}$ down, balance on mortgage. Owner will rent for cash. Name and address of owner, Sarah E. Hadley, administratrix, Pulaski, N. Y.

No. 620—Farm of 76 acres, located 1 mile from Lacona P. O., R. D. 1 and railway station, on line of R. W. & O. Ry., $\frac{1}{2}$ mile from school, $\frac{1}{2}$ mile from Protestant church, 1 mile from butter factory, cheese factory and milk station. Highways, good crushed stone road. Surface of farm rolling. Soil, black loam. Acres in meadow, 20; in natural pasture, 45; in timber, 10, maple and ash. Acres tillable, 50. Fruit, 12 apple, 2 pear and 2 cherry trees. Best adapted to grain, hay and potatoes. Fences, mostly wire, good condition. House, 7 rooms, good condition. Outbuildings, barn with basement, cement stables, 35x80, good condition. Watered, house and barn by good well, field by stream. This farm is 6 miles from Lake Ontario. Occupied by owner. Reason for selling, scarcity of help. Price, \$3,000. Terms, \$1,000 cash, balance on bond and mortgage. Address Wm. L. Wills, Lacona, N. Y.

No. 621—Farm of 186 acres, located 2 miles from Pulaski P. O., R. D. 4 and railway station, school next to farm, 2

miles from Protestant church, butter factory, cheese factory, milk station and milk condensing plant. Highways good. Nearest city, Syracuse, 20 miles distant, reached by rail and highway. Surface of farm level. Soil, good, rich. Acres in meadow, 70; in natural pasture, 70; in timber, 25, mostly hard wood. Acres tillable, 160. Best adapted to hay. Fences in good condition. House, 15 rooms, new and well built. Outbuildings, carriage house, icehouse, ashhouse and other outbuildings, in good condition. Watered, house by well, barns by running water. This farm is 3 miles from Lake Ontario. Occupied by owner. Reason for selling, ill health of owner. For price and terms, address Mrs. Ella Stewart Clark, Pulaski, N. Y.

No. 622—Farm of 160 acres, located $1\frac{1}{4}$ miles from Sandy Creek P. O., 2 miles from railway station at Lacona, on line of R. W. & O. Ry., $1\frac{1}{2}$ miles from school, 1 mile from church, 2 miles from butter factory, cheese factory and milk station. Highways good. Surface of farm rolling. Soil, loam. Acres in meadow, 90; in natural pasture, 60; in timber, 18, beech, birch, maple and hemlock. Acres tillable, 120. Fruit, apples, pears, plums and grapes. Best adapted to corn, oats and hay. Fences in fair condition. Large house, good condition. Outbuildings, barn, 50x34, underground stable; barn, 30x40; henhouse, 60x24, fair condition. Watered, house and barns by well, fields by spring brook. This farm is 3 miles from Lake Ontario. Occupied by tenant. Reason for selling, owner desires to retire from business. Price, \$6,500. Terms, \$2,000 cash, balance to suit purchaser. Address Gilford Hadley, Sandy Creek, N. Y.

TOWN OF SCRIBA

Population 2,199

No. 623—Farm of 111 acres, 5 miles from Oswego. Twelve acres timber. About 350 apple trees, 250 pear trees, plums and other fruit. House, 30x40, with 2 wings, in good condition. Barns, 30x60 and 20x38; sheds and other buildings; all good; also tenant house. Well watered and well fenced. Price, \$55 per acre. Terms, easy. Owner will rent for cash or with option to buy. Address J. H. Worden, Oswego, N. Y., R. D. 2.

TOWN OF WEST MONROE

Population 915

No. 624—Farm of 83 acres, located 2 miles from West Monroe P. O., R. D. No. 1, 2 miles from railway station at West Monroe, on line of N. Y. O. & W. Ry., 1 mile from school, church, butter factory and cheese factory; 2 miles from milk station. Highways good. Surface of farm rolling. Soil, gravel loam and muck. Acres in meadow, 25; in timber, 25, second growth. Acres tillable, about 50. Fruit, apples, plums and grapes. Best adapted to corn, potatoes, cabbage and tobacco. Fences, mostly wire, excellent condition. House, 11 rooms, good condition, also good tenant house. Outbuildings, large barn, containing stables and hay mows; hogpen; henhouse; icehouse and granary, all in excellent condition. Watered, house and barn by well, fields by springs and stream. Occupied by tenant. Reason for selling, owner cannot attend to farm. Price, \$2,000. Terms, small payment down, balance on mortgage. Address E. M. Wightman, Constantia, N. Y. Owner will rent for cash, on shares or with option to buy.

No. 625—Farm of 85 acres, located $1\frac{1}{2}$ miles from West Monroe P. O., R. D. 2 and railway station, on line of N. Y. O. & W. R. R.; 1 mile from school; $1\frac{1}{2}$ miles from Protestant church, butter factory, cheese factory and milk station. Highways good. Surface of farm level. Soil, clay loam and muck. Acres in meadow, 30; in timber, 5, second growth. Acres tillable, 50. Best adapted to gardening, grass, corn and potatoes. Fences, wire, good. House, 7 rooms, roof needs repairs. Barn in fair condition. Watered, house and barn by well, fields by streams. This farm is two miles from Oneida Lake. Occupied by tenant. Reason for selling, owner has too many farms and cannot look after all of them. Price, \$1,800. Terms, small payment down, balance on mortgage. Address E. M. Wightman, Constantia, N. Y. Owner will rent for cash, on shares or with option to buy.

No. 626—Farm of 87 acres, located $2\frac{1}{2}$ miles from West Monroe P. O. and railway station, on line of N. Y. O. & W. R. R.; 1 mile from school; $2\frac{1}{2}$ miles from Protestant church, butter factory, cheese factory and milk station. Highways good. Surface of farm rolling.

Soil, sandy and clay loam. Acres in meadow, 50; in natural pasture, 25; in timber, 12, second growth. Acres tillable, about 75. Fruit, 25 apple, 1 cherry and 2 plum trees, also 1 grape vine. Best adapted to hay, oats, corn, potatoes, wheat and buckwheat. Fences, wire, good. House, upright, 18x24, with wing, 15x20. Outbuildings, barn, 30x40, barn, 40x60; wagonhouse, 13x24; hoghouse, 13x16. Watered, house and barn by well, fields by spring. This farm is $1\frac{1}{2}$ miles from Oneida Lake. Occupied by owner. Reason for selling, ill health of owner. Price, \$4,500. Terms, \$1,000 down, balance on easy terms. Address John E. Lord, West Monroe, N. Y. Owner will rent for cash, on shares or with option to buy.

TOWN OF WILLIAMSTOWN

Population 896

No. 627—Farm of 777 acres; 2 miles from Kasoag P. O. and railway station, on line of R. W. & O. R. R.; 2 miles from school and churches; $2\frac{3}{4}$ miles from milk station and cheese factory. Highways, excellent, some drifts in winter, which will be cared for by snow fences in fields, under the new Highway Law. Nearest village, Williamstown, population 500, $2\frac{3}{4}$ miles distant, reached by highway. Surface, $\frac{1}{3}$ level, $\frac{1}{2}$ rolling, $\frac{1}{6}$ hilly. Acres in meadow, 90; in natural pasture, 200; in timber, 447, good second growth, many yellow birch, black cherry, maples and beech; acres tillable, 120. Best adapted to hay, corn, peas and oats. Fences, post and wire, good condition. House, 2-story upright, about 20x24; wing, about 28x20; excellent cellar, needs shingling. Six-room tenant house; second tenant house. Excellent cow barn, 40x110, with matched siding, cement driveway, water piped from brook; horse barn with box stalls and 4 mangers attached; stone enginehouse; granary; milkhouse. Watered, house piped; large barn, piped; fields, from creeks. Fish Creek, a trout stream, forms the western boundary for $\frac{1}{2}$ mile. About 35 acres of beaver meadow, rich muck land, on farm. Said to be suitable for celery. It is only $1\frac{1}{4}$ miles across neighbor's land in winter to railroad. Occupied by tenant. Price, \$7,500. Terms, \$2,000 cash, 5% interest on balance, all interest and \$200 or more of principal yearly. Address S. C. Huntington, Pultaski, N. Y.

No. 628—Farm of 50¼ acres, located 6 miles from Altmar P. O., R. D. 1, 3 miles from railway station at Kasoag, on line of R. W. & O. R. R.; 1 mile from school, churches and cheese factory; 3 miles from milk station. Highways good. Surface of farm level. Altitude about 750 ft. Soil, gravelly, good. Acres in meadow, 30; in natural pasture, 18; in timber, 2¼, small beech, birch, ash and maple. Acres tillable, 45. Fruit, 45 apple trees and 1 pear tree, also several

blackberry bushes. Best adapted to oats, potatoes and hay. Fences, wire, fair condition. House, upright 18x24, wing 16x24, and wing 14x20, good condition. Outbuildings, barn 40x44, annex for cow stable 20x44, hoghouse 14x18, good condition. Watered, house and barn by well, fields by spring. Occupied by owner. Reason for selling, to close an estate. Price, \$1,200. Terms, \$600 cash, balance on time. Address Mrs. Mary Brooks, Altmar, N. Y., R. D. 4.

OTSEGO COUNTY

Area, 956 square miles. Population, 47,216. Annual precipitation, 46.52 inches. Annual mean temperature, 46.3°. Number of farms, 5,346. County seat, Coopers-town.

This county is situated in the southeastern part of the state. It is drained by the Susquehanna River which has its source in Otsego Lake, by Charlotte River and Butternut and Schenevus creeks. Like all the counties of the state it has an abundance of clear, pure water.

The surface is diversified with high broad ridges and long deep valleys, which are generally very wide. Woodlands of oak, sugar maple, ash, beech and elm, are well scattered through the county and cover nearly one-fourth of its area, namely: 143,817 acres. Sandstone and limestone underlie a part of the county, furnishing excellent building material. The soil in the northern part is a gravelly loam while in the eastern part clay loam predominates. In the southern section a soil is found consisting of a red shale formation. In the other parts of the county the soil of the ridges consists of gravelly loam, while the valleys are covered with a dark clay loam. As a whole the county is especially adapted to pasturage and all kinds of farming. Otsego County produces more hops than any other county in the state; the yield in 1910 being 2,287,383 pounds. Some of the other leading products are corn, 308,096 bushels; oats, 827,095 bushels; buckwheat, 188,855 bushels; potatoes, 1,059,120 bushels; hay and forage, 254,991 tons. The valuation of all farm property is \$26,018,419; an increase of 21 per cent. in the last decade. Domestic animals are reported as follows: Dairy cows, 52,920; horses, 13,258; swine, 14,102; sheep, 10,108; poultry, 303,901; production of milk, 28,047,600 gallons; this with the products of 75 milk stations and factories showed receipts of \$2,796,808. The transportation facilities of the county are excellent; Richfield Springs is popular as a health resort, the springs having great medicinal value. A state normal school is located at Oneonta. There are 296 district schools in the county, 25 agricultural organizations, 78 miles of state and county roads and 2,078 miles of improved highways.

TOWN OF BURLINGTON

Population 1,108

No. 629—Farm of 137 acres; 1 mile from Burlington Flats P. O., R. D. 1; 5 miles from railway station at Edmeston, on line of O. & W. R. R.; 1 mile from school, Baptist and Methodist churches and cheese factory; 5 miles from condensing plant. State road. Nearest city, Utica, population 75,000, 28 miles distant, reached by rail or trolley. Surface of farm, good. Altitude, 1,240 feet. Soil, good. Acres in meadow, 60; in natural pasture, 60; in timber, 17, beech, maple and hemlock.

Fruit, 25 apple trees. Best adapted to corn, oats and potatoes. Fences, mostly barbed wire. House, large and good. Barns: cow barn, 30x60, in good condition; horse barn and wagonhouse combined; large henhouse; hoghouse and storehouse. Watered, house, by well, soft water; barns, by creek nearby; fields, by creek and springs. Nine miles from Schuyler Lake. Desirable location, healthful locality. Occupied by tenant. Reason for selling, poor health of owner. Price, \$4,500. Terms, ½ cash. Owner will rent. Address F. W. Towne, Burlington Flats, N. Y.

No. 630—Farm of 80 acres, located $3\frac{1}{2}$ miles from Edmeston P. O., R. D. 1, and railway station, on line of N. Y. O. & W. R. R.; $\frac{3}{4}$ mile from school; $2\frac{3}{4}$ miles from Protestant churches; 5 miles from cheese factory; 3 miles from milk station. Highways, somewhat hilly but good. Surface of farm rolling. Altitude, 1,730 feet. Soil, loam. Acres in meadow, 16; in natural pasture, 25; in timber, 15, hard wood and basswood; acres tillable, 60. Fruit, apples, plums, cherries, strawberries, raspberries and blackberries. Best adapted to grass, corn, oats, potatoes, etc. Fences, wire, good condition. House 22x30, with wing 14x20, two porches, fair condition. Outbuildings, barn 36x36, good basement, concrete floor, wagonhouse and shed 22x28, fair condition. Watered, house and barns by running water, fields by springs and brook. Occupied by owner. Reason for selling, advanced age of owner. Price, \$35 per acre. Terms, $\frac{1}{2}$ cash. Address Chas. Bennington, Edmeston, N. Y.

TOWN OF BUTTERNUTS

Population 1,453

No. 631—Farm of 137 acres; 3 miles from Mt. Upton P. O. and railway station, on line of O. & W. R. R.; 1 mile from school; 3 miles from churches; 3 miles from Borden's condensery. Highways, $\frac{1}{2}$ mile hilly, remainder of valley grade, good. Nearest large town, Sidney, population 2,507, distant 9 miles, reached by highway and rail; nearest villages, Mt. Upton, distant 3 miles, and Gilbertsville, 4 miles distant. Occupied by owner. Surface, about 10 acres hilly, balance smooth and rolling. Soil, red shale, good. Acres in meadow, 50; pasture, 60; timber, 27; about 10,000 feet of hard wood and about 25,000 feet of hemlock; acres tillable, about 80. Fruit, about 100 apple trees, 15 pear trees, orchard in good bearing condition and young. Best adapted to hay, oats, millet, corn, potatoes, etc. Fences, mostly barbed wire, good. House, 24x28, fair condition. Barns: one, 46x80, new; wagonhouse, 26x30, fair; granary and hennery, fair. Watered, house, by well and cistern; barns, by pond; fields, by spring and brooks. Unadilla River 3 miles, and Butternut Creek 1 mile distant. Mail every day by milk teams. Finest of maple shade around house.

Young tract of pine growing. Meadows picked of stones, upland smooth. Reason for selling, owner cannot work. Price, \$4,000. Terms, part of price could be arranged to remain on place. Address J. A. Musson, Mt. Upton, N. Y.

No. 632—Farm of 210 acres, located $1\frac{1}{2}$ miles from Gilbertsville P. O., $6\frac{1}{2}$ miles from railway station at Mt. Upton, on line of N. Y. O. & W. R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{2}$ miles from Protestant churches and butter factory; 2 miles from cheese factory; $6\frac{1}{2}$ miles from milk station and milk condensing plant. Highways, good, part State road. Nearest city, Oneonta, population about 10,000, 17 miles distant, reached by rail and highway. Surface of farm rolling. Altitude, 1,165 feet. Soil, good. Acres in meadow, about 140; in natural pasture, about 25; acres tillable, 180. Fruit, apples and pears. Best adapted to corn, oats, potatoes and hay. Fences, wire, good condition. House, 12 rooms, long piazza. Outbuildings, horse barn, 50x48; barn, $40\frac{1}{2}$ x30; hay barn, 65x50; cornhouse; milkhouse; large dairy house; pigpen and long cow shed, cement floor in stable. Watered, house and barn by running water, fields by springs. A brook runs through farm. Occupied by tenant. Reason for selling, owner lives in New York city and cannot attend to farm. Price, \$6,000. Terms, \$2,500 cash, balance on mortgage. Will sell dairy also, if purchaser desires. Address F. E. Brewer, 41 Hamilton Ave., New Brighton, New York.

* No. 633—Farm of 190 acres; 4 miles from Gilbertsville P. O. and $5\frac{1}{2}$ miles from railway station, on line of D. & H. R. R.; $\frac{1}{4}$ mile from school; 4 miles from Protestant churches; $\frac{1}{2}$ mile from cheese factory; good schoolhouse on farm, in sight of house; good cheese factory in sight of house. Roads, good but somewhat hilly. Surface, rather hilly, but meadows fairly level. Soil, red shale. Acres in meadow, 60; natural pasture, 80; timber, 20, mostly hard wood; all tillable except woodland. Fruit, fair amount of fruit, apples, plums and pears. Best adapted to corn, oats, rye, buckwheat, hay and potatoes. Fences, wall, wire and rail, in good condition. House, good size, in good condition. Barns: 3 barns, wagonhouse and

* Farm is in hands of agent or real estate dealer.

hogpen. Watered, house and barns, by running water; fields, by springs and creek. Reason for selling, owner a widow who has other business. Price, \$3,500. Terms, \$1,500 down, balance on time. Address Wm. F. Ward, Gilbertsville, N. Y.

TOWN OF CHERRY VALLEY

Population 1,706

No. 634—Farm of 30 acres; 2 miles from Cherry Valley P. O. and railway station, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school; 2 miles from churches, butter factory and milk station. Highways, hilly, but in good condition. Nearest village, Cherry Valley, population, 792, 2 miles distant, reached by highway. Surface, half rolling, half wood lot on hillside. Acres in meadow, 15; in timber, 15; acres tillable, 15. Best adapted to hops, corn, potatoes, oats and hay. Fences, in fair condition. House, new, but not completed; needs \$350 to complete. 1 barn and 1 hophouse. Well suited for a city man wanting a fine, cheap summer home. Watered by spring. Occupied by owner. Reason for selling, farm taken on a mortgage. Price, \$600. Terms, \$400 cash, balance on mortgage; all cash preferable. Owner will rent with option to buy. Address Mary G. H. McMaster, Saratoga Springs, N. Y.

No. 635—Farm of 160 acres; 4 miles from Cherry Valley P. O., R. D. 2; 3 miles from railway station at Sharon Springs, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school and Protestant churches; 3 miles from butter factory and milk station. Highways, good. Surface, mostly level. Soil, limestone, good. Acres in timber, 35, beech, maple, ash and basswood; acres tillable, 125. Fruit, apples, pears, cherries, plums; also currants and black berries. Best adapted to hay, grain, potatoes, corn, hops, etc. House, 40x26, 14 rooms, attic and woodhouse. Outbuildings: barn, 40x44, with shed, 18x30; wagonhouse, 24x45; pigpen, 15x20; all in good condition. Telephone in house. Tenant house and barn on farm. Watered, house by well; barns, by well and springs; fields, by springs. Reason for selling, to close an estate. Price \$4,000. Address John D. Lynk, Cherry Valley, N. Y.

TOWN OF DECATUR.

Population 476

No. 636—Farm of 150 acres, located 4 miles from Worcester P. O., R. D. No. 2 and railway station, on line of D. & H. R. R., $\frac{1}{4}$ mile from school, $\frac{1}{3}$ mile from Protestant Church and cheese factory, 4 miles from milk station. Highways good. Surface of farm rolling. Altitude about 2,000 ft. Soil, gravelly loam. Acres in meadow, 65, in natural pasture, 60, in timber, 25, hardmaple, hemlock and beech. Acres tillable, 115. Fruit, 40 apple, 5 cherry, 4 pear, 6 plum trees, also blackberries and red raspberries. Best adapted to hops, potatoes, grain and corn. Fences, barbed wire, good condition. House, upright 36x28 with ell 18x30, good condition. Outbuildings, basement barn 44x60, good condition, granary 14x14, henhouse 12x50, new. Watered, house by running spring water, barns by brook, fields by brook and springs. Several small lakes within 3 miles of farm. Occupied by owner. Reason for selling, ill health of owner. Price \$5,000. Terms \$3,000 cash, balance on mortgage. Address Albert L. Oathout, Worcester, N. Y., R. D. 2. Owner will rent with option to buy.

TOWN OF EDMESTON.

Population 1,567

No. 637—Farm of 42 acres; in village of Edmeston, on line of N. Y. O. & W. R. R.; graded school; Baptist and Methodist churches; condensing plant in village. State road. Nearest cities, Oneonta and Norwich, 24 miles distant, reached by rail or highway. Surface of farm, part level and part rolling. Altitude, 1,232 feet. Soil, clay loam, very strong soil. Acres in meadow, 25; in natural pasture, 17; all tillable. Fruit, 20 apple trees, winter and fall varieties. Best adapted to corn, oats, potatoes, beans, peas and hay. Fences, board and wire, in good condition. Large 2-story house, with 2 wings, hot water heat, hot and cold water throughout, \$1,500 in plumbing, nicely painted, large lawn. Barns: 84x40, slate roof, cost \$2,000 to build, modern; another barn, 30x40, fine repair; large granary, in fine repair. Watered, house, by city water; barns, by running water; fields, by running water and living spring, 7 miles from Unadilla River. A fine small farm in village; there is a flat

at end of street with 26 building lots ready to sell and open up. Occupied by owner. Reason for selling, owner has business interests elsewhere. Price, \$8,000. Terms, \$4,000 cash, balance long term of years at 5%. Address A. H. Medbury, Edmeston, N. Y. Owner will rent.

No. 638—Farm of 150 acres; $2\frac{1}{2}$ miles from Edmeston P. O.; $2\frac{1}{2}$ miles from railway station at Edmeston, on line of O. & W. R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from Baptist and Methodist churches, from butter factory, cheese factory, milk station and condensing plant. Highways, good, on a grade, but not bad hills. Nearest village, Edmeston, population 700. Surface of farm, meadows slope to east. Soil, very productive. Acres in meadow, 40; in natural pasture, 70; in timber, 40, maple, beech and hemlock; acres tillable, 40. Fruit, fairly good orchard of 50 trees, various kinds. Best adapted to corn, oats and hay. Fences, mostly barbed wire, in good condition. 14-room house, in good condition. New barn, 32x70, with concrete floor, swing stanchions for 30 head, 2 box stalls, 4 horse stalls, roofed with best grade of metal shingles; silo; 4 other buildings. Watered, house, by spring; fields by never-failing springs. Occupied by tenant; lease expires March 1, each year. Reason for selling, owner has other business. Price \$4,500. Terms, \$3,000 cash, balance 5 years at 5%. This farm could be purchased stocked with 15 head of pure-bred Holstein-Friesian cows. Address Clarence Talbot, Edmeston, N. Y.

No. 639—Farm of 235 acres; $\frac{1}{2}$ mile from Edmeston P. O., R. D. 1, and railway station, on line of N. Y. O. & W. R. R.; $\frac{1}{4}$ mile from school; 1 mile from churches; $\frac{1}{2}$ mile from Borden's condensed milk plant. Highways, good. Nearest city, Oneonta, population 9,491, 24 miles distant, reached by rail and highway. Surface of farm, part level and part rolling. Altitude, 1,200 feet. Soil, loam, very strong. Acres in meadow, 100; in natural pasture, 80; in timber, 55, hemlock, maple and beech; acres tillable, 175. Fruit, apples. Best adapted to corn, oats, potatoes, beans, peas, hay, etc. Fences, mostly wire, good condition. House, 2 stories, with wing, large, good condition. Out-

buildings: basement barn, 109x32, cement floors all through, stable room 44 head of cattle; 2 silos, 140-ton capacity; long shed, 100 feet, with hay loft above; 4 outbuildings; all in good repair. Watered, house and barn, by running water; fields, by living streams. This farm is 6 miles from Unadilla River. Occupied by tenant. Reason for selling, owner is in business in Michigan. There is \$5,000 worth of hemlock timber on farm; 125 tons of hay were cut last year. Price, \$50 per acre. Terms \$5,000 down, balance on long time at 5% interest. Address A. H. Medbury, Edmeston, N. Y.

No. 640—Farm of 403 acres, located 3 miles from Edmeston P. O., R. D. 1 and railway station, on line of N. Y. O. & W. R. R., 1 mile from school, 3 miles from Protestant Churches and milk station, 4 miles from milk condensing plant. Highways good. Surface of farm, $\frac{1}{2}$ creek bottom, level; balance rolling. Altitude about 1,000 feet. Soil, gravel loam, good. Acres in meadow 150, in natural pasture 150, in timber 100, small wood. Acres tillable, 275. Fruit, apples. Best adapted to dairying, corn, potatoes, oats, peas, etc. Fences, barbed wire, fair condition. House old Dutch Manor, needs some repairs. Outbuildings, barn with stable room for 75 head of cattle, needs remodeling. Watered, house and barn by spring. Wharton Creek runs through farm. Unoccupied. Reason for selling, owner has too much land. Price \$14,000. Terms, \$8,000 cash, balance on long time at 5%. Address Dan W. Barrett, Edmeston, N. Y.

TOWN OF EXETER

Population 1,067

No. 641—Farm of 187 acres; 2 miles from Schuyler Lake; 1 mile from Exeter P. O. Soil, very productive. Acres in timber, 70, consisting of beech, maple, white ash, cherry and basswood. Good $1\frac{1}{2}$ -story house, 3 good barns, 30x45 each. Watered, house by driven well, which will produce 200 pails of water per day in the dryest time; running water in barn. Fences, good. Owner has lived on farm for 50 years. This farm is stocked with high-grade Holstein cows. Will sell cows, horses and all farming implements if buyer desires. Reason for selling, owner

unable to work farm. Price, \$20 per acre. Name and address of owner, Moses Daly, Exeter, N. Y.

No. 642—Farm of 13 acres, adjoining the village of Exeter Center; 2 miles from Schuyler Lake; store and post-office on the land; close to good school and churches. Very desirable property for summer home. On a good road; in a fine location. Five acres of orchard. Very fertile soil. House, 2 stories, in good condition, 35x40, with wing, 20x30. Barn, good, 35x65, with new addition; other outbuildings, henhouse, etc. Watered by springs, well and brook. Fences, good. Price, \$4,000. Terms, \$2,000 cash, balance on time. Owner will rent for cash or with option to buy. Name and address of owner, P. J. Horan, Exeter, N. Y.

TOWN OF HARTWICK

Population 1,813

*No. 643—Farm of 245 acres, located 3 miles from Cooperstown P. O. and railway station, on line of D. & H. R. R., $\frac{1}{2}$ mile from trolley, school and churches, cheese factory on farm. Highways, State road. Surface of farm, mostly level, small portion hilly. Soil, black loam. Acres in natural pasture, 30, in timber, 35. Acres tillable, 180. Fruit, 100 apple trees, also a few plums, pears and cherries. Best adapted to hay, grain, hops and livestock. Fences, fair to good. House, 44x30 with ell, good condition, 14 rooms. Outbuildings, basement barn 105x36, steel roof, good, 4 tenant houses, large horse barn, corn crib, cheese factory, horse barn, poultry house, tool-house, etc. Watered, house and barn by running water, fields by springs. This farm is 3 miles from Otsego Lake. Occupied by owner. 2 silos on farm. Reason for selling, owner wants a smaller place. Price, \$10,000. Terms, $\frac{1}{3}$ down; might take a small farm in part payment. Address Frank H. Knox, agent, 469 State St., Schenectady, N. Y.

TOWN OF LAURENS

Population 1,453

No. 644—Farm of 142 acres; 2 miles from Laurens P. O.; R. D. 1; 2 miles from railway station at Laurens, on line of Otsego & Herkimer Electric R. R.; $\frac{1}{8}$ mile from school; 2 miles from churches and butter and cheese factory. Highways, good. Nearest city, One-

onta, population 9,491, 8 miles distant, reached by trolley. Surface, part level and part hilly. Soil, clay. Acres in meadow, 20; in natural pasture, 50; in timber, 12, mostly hard wood; acres tillable, 100. About 75 fruit trees. Best adapted to corn, oats, buckwheat and potatoes. Fences, wire, in fair condition. House, 7 rooms, in fair condition. Basement barn, large horse barn, henhouse and granary. Watered by well. Outlet of Gilbert's Lake, 1 mile distant, passes through farm; 9 miles from Susquehanna River. Reason for selling, age and health of owner. Price, \$3,000. Terms, \$1,000 down, balance on mortgage. Owner will rent for \$150. Address Mrs. W. R. Brink, Laurens, Otsego Co., N. Y.

No. 645—Farm of 110 acres; 2 miles from Laurens P. O. and railway station at Laurens, on line of Oneonta & Mohawk Electric R. R.; 2 miles from church and milk station; 1 mile from school. Highways, good. Nearest city, Oneonta, population 9,491, 11 miles distant, reached by rail. Surface, rolling. Soil, good mellow loam. Acres in meadow, 50; in natural pasture, 35; in timber, 25, pine, hemlock, beech and maple. About 145 fruit trees. Best adapted to corn, oats and potatoes. Fences, wire, in good condition. House, 16x40, wing, 24x32, summer kitchen, 16x16, in good condition. Barn, 44x74. Watered, house, by pump; barns, by running water; fields, by springs and creek. Within 2 miles of Gilbert's Lake. About \$1,000 worth of timber on the place. Reason for selling, dissatisfaction of owners. Price, \$4,000. With stock, tools, farm machinery and crops, price, \$5,000. Terms, \$3,000 cash, balance on mortgage. Address A. H. Knight, Laurens, N. Y.

No. 646—Farm of 208 acres; 2 miles north from Laurens P. O. and railway station on O. & M. V. R. R.; 1 mile from school; 2 miles from Protestant churches and butter factory. Highways, somewhat hilly, but good. Eleven miles from city of Oneonta, population 9,491, reached by highway and rail. Occupied by owner. Surface, rolling and level. Soil, dark loam. Acres in meadow, 100; natural pasture, 50; timber, 58, beech and hemlock; acres tillable, 125. Fruit, 3 pear trees and

* Farm is in hands of agent or real estate dealer.

large apple orchard. Best adapted to oats, corn, potatoes, buckwheat, rye and hay. Fences, wire, in fair condition. New barn and other outbuildings, large and in fair condition. Watered, house, by well; barns and fields, by springs. Reason for selling, advanced age of owner. Price, \$3,500. Terms, $\frac{1}{2}$ down, balance on mortgage. Address Egbert Houghtaling, Laurens, N. Y.

No. 647—Farm of 96 acres; $\frac{1}{4}$ mile from West Laurens P. O.; 5 miles from railway station; $\frac{1}{4}$ mile from school and churches; R. D. 1 from Laurens Highways, good. Nearest large village, Laurens, 4 miles distant; nearest city, Oneonta, 9 miles distant. Unoccupied. Surface, rolling. Soil, good. Acres in meadow, 45; natural pasture, 26; timber, 25, pine, hemlock and hard wood; acres tillable, 55. Fruit, apples and pears. Best adapted to corn, oats, barley, potatoes, etc. Fences, wire and board. House, large, has accommodated 60 hop pickers. Large basement barn and small barn. Watered by wells, creek and springs. About \$1,000 worth of timber on farm. Price, \$3,000. Terms, $\frac{1}{2}$ down, mortgage for balance. Owner will rent with option to buy. Address O. A. Weatherly, Milford, N. Y.

TOWN OF MARYLAND

Population 1,852

No. 648—Farm of 159 acres; $2\frac{1}{2}$ miles from Maryland P. O. and railway station at Maryland, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from church and milk station. Highways, good. Nearest city, Oneonta, population 9,491, $14\frac{1}{2}$ miles distant, reached by rail and highway. Surface, wide valley, nearly level, with pastures on hillsides. Soil, good. Acres in meadow, 62; in natural pasture, 57; in timber, 40; maple, beech, chestnut and hemlock; acres tillable, 108. A few fruit trees. Best adapted to potatoes, oats, buckwheat and corn. Fences, wire and rail, in fair condition. Large frame house, in good condition, but needs painting. Two large barns, in good condition; large henhouse and saphouse. Running water in house and barns. Nine miles from Otsego Lake; 2 miles from Crumhorn Lake. Trout brook on farm. This is one of the best dairy farms in the town of Maryland and would be suitable for summer home. Reason for selling, death of husband of

owner. Price, \$3,500. Terms, \$1,350 on mortgage, balance cash. Owner will rent. Address Mrs. E. G. Brown, Worcester, N. Y.

No. 649—Farm of 15 acres, located 1 mile from Schenevus P. O. and railway station, on line of D. & H. Susquehanna Division; $\frac{1}{8}$ mile from school and Methodist church; 1 mile from Catholic, Presbyterian and Baptist churches; 1 mile from milk station. Highways hilly but good. Nearest city, Oneonta, 16 miles distant, population about 10,000, reached by rail and highway. Surface of farm rolling and level. Soil, gravelly loam, good. Acres in meadow, 13; acres tillable, 15. Fruit, 35 apple, 4 pear and 2 plum trees, also raspberries and blackberries. Best adapted to grass, potatoes, berries, garden stuff, etc. Fences, stone wall. House, 20x30, with wing, 12x12, 5 rooms and attic, $1\frac{1}{2}$ stories, upper story unfinished. Outbuildings, barn, 20x30, with linter, 30x12, good condition. Watered by well. Unoccupied. Reason for selling, owner desires to secure a larger place. Price, \$800. Terms cash. Address Wm. J. Wheeler, Schenevus, N. Y.

No. 650—Farm of 30 acres, located $3\frac{1}{2}$ miles from Schenevus P. O., R. D. 1 and railway station, on line of D. & H. R. R.; 1 mile from school; $3\frac{1}{2}$ miles from Catholic and Protestant churches and milk station. Highways, good, part State road. Nearest city, Oneonta, 16 miles distant, population about 10,000, reached by rail and highway. Altitude about 1,600 feet. Soil, some slate, mostly good. Acres in meadow, 15; in natural pasture, 5; in timber, 10, hard and soft wood, chestnut and pine. Acres tillable, 20. Fruit, apples, pears, plums and berries. Best adapted to hay, corn and potatoes. Fences, some rail and some wire, good. House, 28x30, fair condition. Outbuildings, barn, 30x40, good condition. Watered, house by running water, barn by brook, fields by spring and brook. Occupied by tenant. Reason for selling, owner lives too far away to attend to farm. Price, \$600. Terms cash. Address Manley E. Clark, Sussex, N. J.

No. 651—Farm of 100 acres, located $\frac{1}{2}$ mile from Schenevus P. O., R. D. 1 and railway station, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school, Catholic

and Protestant churches and milk station. Highways, level and smooth. Nearest city, Oneonta, 15 miles distant, population about 10,000, reached by rail and highway. Surface of farm, meadows rolling, pasture side hill. Soil, gravel and loam. Acres in meadow, 40; in natural pasture, 40; in timber, 20, hemlock, basswood and hardwood. All tillable except timber land. Fruit, 100 apple, 3 pear, 7 cherry and 12 plum trees, also currants and $\frac{1}{2}$ acre of red raspberries. Best adapted to oats, buckwheat, corn and potatoes. Fences, barbed wire, good condition. House, 24x40, with wing, 14 rooms, good condition. Outbuildings, horse barn, 20x40, cow barn, 26x36; shed, 20x40; hophouse, 26x36; shop, 18x30 and henhouse, 15x20. Watered, house by faucet in kitchen, barns by running water, fields by springs and creek. Schenevus Lake is $\frac{1}{2}$ mile and Schenevus Creek $\frac{1}{4}$ mile from farm. Occupied by owner. Reason for selling, owner has other business to attend to. Price, \$3,000. Terms, \$1,100 cash, balance on mortgage. Address Geo. H. Talmadge, Schenevus, N. Y., R. D. 1.

TOWN OF MIDDLEFIELD

Population 1,949

No. 652—Farm of 250 acres; 2 miles from Roseboom and 6 miles from Cherry Valley railway station, on the D. & H. R. R. Soil, black loam. Acres in meadow, 100; pasture, 100; timber, 50. House, large, in good condition. Barns and outbuildings: 3 large barns; 1 cow stable; 1 large horse barn, new cow barn, hoghouse and henhouse with concrete floors. Watered by creek, wells and springs. Fences, wire, in good condition. Reasonable price. Terms, moderate. Owners will rent on shares of $\frac{1}{2}$ or with option to buy. Name and address of owners, T. & W. Cunningham, Cooperstown, N. Y., R. D. 5.

TOWN OF MORRIS

Population 1,434

No. 653—Farm of 30 acres; 1 mile from Morris; R. D. 1; trolley station at Laurens, 5 miles distant, and railway station at New Berlin. Soil, rich. Acres in meadow, 9; pasture, 12; timber, 9, second growth, hard wood. House, 2 stories, 36x40, with wing, 10x30, painted white, green trimmings, in fine condition, newly shingled. Barns: 24x36, 24x30, in good condition. Fences,

wire, nearly new. Watered by living springs piped to house and barns. Farm in thorough state of cultivation, plenty of fruit. Fine location overlooking the town. Market at Morris, village, which contains 5 churches, high school, stores, shops, etc. Price, \$3,600. Terms, \$2,000 cash, balance on time at 5%. Address W. B. Gilbert, Morris, N. Y.

No. 654—Farm of 98 acres, located 2 miles from Morris P. O., R. D. 1, 10 miles from railway station at Mt. Upton, on line of O. & W. R. R.; 2 miles from school, Protestant churches, cheese factory and milk station; $2\frac{1}{2}$ miles from butter factory. Highways, State road. Nearest city, Oneonta, 16 miles distant, population about 10,000, reached by highway. Surface of farm level. Soil, partly loam and partly gravel. Acres in meadow, 35; in natural pasture, 35; in timber, 15, hemlock and pine, good. Acres tillable, 75. Fruit, a few apple trees, also young apple orchard, just set. Best adapted to grass, grain and corn. Fences, some new wire, remainder fair. House, 17 rooms, good condition. Outbuildings, barn, 36x76, good, and other outbuildings in fair condition. Watered by well. Butternut Creek bounds one side of farm. Occupied by owner. Reason for selling, ill health of owner. Price, \$5,500. Terms, \$3,500 down. Address Clayton Aplin, Morris, N. Y.

No. 655—Farm of 60 acres, located $2\frac{1}{2}$ miles from Morris P. O., 5 miles from railway station at New Berlin, on line of O. & W. R. R.; 5 miles from milk station and milk condensing plant; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from Catholic and Protestant churches. Highways, somewhat hilly but good. Surface of farm, rolling and level. Altitude, 1,600 feet. Soil, good. Acres in meadow, 30; in natural pasture, 10; in timber, 10, good for firewood, hard. Acres tillable, 10. Fruit, 30 trees in all, mostly apples, a few pears and cherries. Best adapted to oats, corn, buckwheat and barley. Fences, wire and wood, good condition. House, 8 rooms, good condition. Outbuildings, large barn with three horse stalls and six cow stanchions, two hay mows, 2 wagon sheds and 2 hen houses. Watered, house and barn by well, fields by spring and creek. Occupied by owner. Reason for selling, to settle an estate.

Price, \$1,400. Terms, cash. Address Mrs. Phoebe A. Simpson, New Berlin, N. Y.

TOWN OF NEW LISBON

Population 1,039

No. 656—Farm of 150 acres; $\frac{3}{4}$ mile from Garrettsville P. O.; 5 miles from railway station at Edmeston, on line O. & W. R. R.; $\frac{1}{2}$ mile from Borden's milk route or from creamery route and Turtle Lake; 1 mile from Butter-nut Creek. Highways, in good condition. Soil, hardpan loam. Acres in meadow, 50; in natural pasture, 60; in timber, 10 acres of hard wood; acres tillable, 110. Fruit, apples, plums, pears and grapes. Best adapted to oats, corn, potatoes and buckwheat. Altitude, 1,500 feet. Fences, wire and board, fair condition. Outbuildings: basement barn, 34x50; horse barn, 30x40; good condition. House burned but bungalow can be easily constructed from carriage house. Watered, house, by drilled well; barns, by windmill; fields, by streams and springs. Reason for selling, to close an estate. Price, \$2,000. Terms, one-half down, remainder on mortgage at 5%. Address Mrs. W. I. Smith, New Lisbon, N. Y.

No. 657—Farm of 241 acres, located $2\frac{1}{2}$ miles from Garrettsville P. O., 8 miles from railway station at Edmeston, on line of N. Y. O. & W. R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from Protestant churches; 12 miles from butter factory; 5 miles from cheese factory; 2 miles from milk station; $9\frac{1}{2}$ miles from milk condensing plant. Milk team goes past farm each morning to butter factory and gathers up milk. Highways good. Surface of farm, somewhat hilly. Altitude, 1,200 feet. Soil, gravelly loam. Acres in meadow, 60; in natural pasture, 106; in timber, 75, hemlock and basswood, small. Acres tillable, 140. Fruit, small apple orchard. Best adapted to grass, corn, oats, buckwheat, barley and potatoes. Fences, barbed wire, good condition. House, 25x32, good condition. Outbuildings, cow barn, 30x108; horse barn, 28x42; hoghouse, 20x30; all in good condition. Watered, house and barn by spring water, piped, fields by brook. Occupied by tenant. Reason for selling, owners live too far away to attend to farm. Price, \$4,500. Terms, cash. Address V. D. Robinson or Jay J. Underwood, Edmeston, N. Y.

No. 658—Farm of 80 acres; $2\frac{1}{2}$ miles from Garrettsville P. O.; on R. D. 3 from New Berlin. Soil, loam, very productive. Acres in meadow, 40; pasture, 30; timber, 10. There are locust trees on the farm which nearly pay for the place. House, 32x25. Barns: basement barn, 36x46; cow barn, 20x40; granary; henhouse; hoghouse. Watered by never-failing spring, piped to house and barns. Fences, wire, rail and locust trees. Price, \$1,700. Terms, easy. Address Henry Hnoch, New Berlin, N. Y., R. D. 3.

No. 659—Farm of 202 acres; 2 miles from New Lisbon; Laurens station, 5 miles distant. Soil, gravelly loam. One hundred and fifty acres tillable; 75 in pasture; 52 heavy timber. Good house, 30x40, with wing, 20x30. Several barns and outbuildings, nearly new. Springs and brook. Well fenced. Will keep 30 cows. Price, \$3,500. Terms, \$1,500 cash balance on time. Address W. J. Smith, owner, New Lisbon, N. Y.

No. 660—Farm of 100 acres; about 3 miles from Hartwick P. O., on R. D. 2 from Mount Vision; trolley line at Hartwick; near a good cheese factory. Acres in meadow, 30; pasture, about 30; timber, about 30. House, $1\frac{1}{2}$ stories, 24x30, 4 rooms and closets upstairs, 5 rooms and closets downstairs. Two good barns, with basement, 30x40 and 24x32. Watered by wells near house; springs in pasture. Fences, mostly barbed wire, in fair condition. This farm would make a good dairy farm. Price, \$2,000. Will make confidential terms to purchaser. Name and address of owners, C. H. & Mary P. Young, Mount Vision, N. Y., R. D. 2.

TOWN OF OTEGO

Population 1,699

No. 661—Farm of 167 acres, located $3\frac{1}{2}$ miles from Otego P. O., R. D. 3 and railway station, on line of D. & H. R. R., $\frac{3}{4}$ mile from school, $2\frac{1}{2}$ miles from churches, $3\frac{1}{2}$ miles from milk station and milk condensing plant. Milk route passes farm. Highways good. Nearest city, Oneonta, 7 miles distant, population about 10,000, reached by rail and highway. Surface of farm, part rolling and part level. Soil, gravel, loam. Acres in meadow 75, in natural pasture 40, in timber 10, first and second growth. Acres tillable, 100. Fruit, 2 good-sized orchards, one young and one old, all kinds

of fruit. Best adapted to oats, potatoes, buckwheat and corn. Fences, wire. House, 10 rooms, can be arranged for two families. Outbuildings, one barn 40x70, barn 30x40, good condition, hen house, hog house and milk house. Watered, house and barn by running water, fields by creek and springs. Occupied by tenant. Reason for selling, owner in other business. Price, \$5,500. Terms, \$1,500 or more down. Address R. R. Lacey, 22 Mill St., Binghamton, N. Y.

TOWN OF OTSEGO

Population 4,287

No. 662—Farm of 230 acres; 3 miles from Otego P. O., R. D. 4; 3 miles from railway station at Otego and Wellsbridge, on line of D. & H. R. R.; 1 mile from school; 3 miles from Methodist, Baptist, Presbyterian churches; 1¼ miles from butter factory; 3 miles from milk station. Highways, good, part State road. Nearest city, Oneonta, population 9,491, 12 miles distant, reached by D. & H. R. R. and State road. Surface of farm, rolling upland, facing east. Altitude, 1,200 feet. Soil, red loam. Acres in meadow, 50; in natural pasture, 155; in timber, 25, second growth chestnut; acres tillable, 100. Fruit, 35 apple and 12 plum trees. Best adapted to hay, corn, oats, potatoes and hops. Fences, stone wall and wire, in good condition. House, 10 rooms, partly new. Basement barn, 40x75, new, concrete floor in stables. Stable for 45 cows; wagon-house, 5 horse stalls; cow barn, with silo, 10x28. Watered, house, by well; barns, by spring near barn; fields, by brook and springs. One mile from Susquehanna river. A very productive farm, good location, wintered 48 cows last winter and had 10 tons of hay left. Occupied by owner. Reason for selling, owner unable to secure help. Owner would like to sell hay, stock, horses and farming tools with farm. Price, \$6,000. Address J. E. Southard, Otego, N. Y.

TOWN OF PITTSFIELD

Population 917

No. 663—Farm of 180 acres; 4½ miles from railway station at New Berlin, on line of O. & W. R. R.; ⅛ mile from school and churches; 4½ miles from condensing plant. Highways, hilly, but good. Nearest city, Oneonta, population 9,491, 17 miles distant, reached by

highway. Surface of farm, rolling. Altitude, 1,300 feet. Soil, loam. Acres in meadow, 45; in natural pasture, 80; in timber, 50, hemlock, beech, maple; acres tillable, 125. Fruit, 100 apple trees. Best adapted to grass, oats, corn, and potatoes. Fences, mostly wire in fair condition. Two family house, with porch, painted, in fair condition. Two basement barns, one 30x64 and one 26x40. New silo. Watered, house, by well nearby; barns, by small creek; fields, by creek and spring. Four and one-half miles from Unadilla River. Occupied by owner. Sawmill on farm. Reason for selling, hired help problem. Price, \$4,500. Terms, \$1,500 cash. Address Eugene Brace, New Berlin, N. Y., R. D. 3.

TOWN OF PLAINFIELD

Population 844

No. 664—Three farms of 645 acres, located 3½ miles from railway station at Leonardsville on line of Unadilla Valley Ry., 3½ miles from Protestant Churches, 6 miles from Catholic Church, 1½ miles from cheese factory, 3½ miles from milk station. Highways hilly. Nearest city, Utica, 22 miles distant, reached by rail and highway. Surface of farm hilly. Altitude about 1,600 feet. Productive soil, some timber, maple, beech, basswood, ash and birch. Fruit, apples and pears. Three sets of buildings. Best adapted to grass, corn, oats, potatoes and grain. Watered by well and cistern. Reason for selling, ill health of owner. Price, \$12,000. Terms, ½ down, balance on mortgage. Address F. E. Armstrong, West Winfield, N. Y., R. D. 3.

No. 665—Farm of 100 acres, located 2 miles from West Exeter P. O., 3½ miles from railway station at Leonardsville, on line of U. V. Ry., 1 mile from school, 2 miles from Methodist Church and cheese factory, 3½ miles from milk station. Highways hilly. Surface of farm rolling. Soil, clay loam. Acres in meadow 40, in natural pasture 45, in timber 15, hemlock, maple and beech. Acres tillable 60. Best adapted to hay, corn, oats and potatoes. Fences, barbed wire, good. House, medium size, 9 rooms, good. Outbuildings, barn 30x55, fair condition. Watered by never-failing spring. Occupied by owner. Price, \$1,500. Address Arthur J. Richards, Burlington Flats, N. Y. Owner will rent for cash or with option to buy.

No. 666—Farm of 240 acres, located $\frac{1}{2}$ mile from West Winfield P. O., R. D., 2; $3\frac{1}{2}$ miles from railway station at West Winfield, on line of D. L. & W. R. R.; $\frac{1}{2}$ mile from school and Protestant church; 1 mile from cheese factory; $3\frac{1}{2}$ miles from milk station. Highways, somewhat hilly. Nearest city, Utica, 20 miles distant, reached by rail and highway. Surface of farm, hilly, rolling and level. Altitude about 1,500 feet. Soil, clay loam, good. Acres in meadow, 50; in natural pasture 125, in timber, 40, beech, birch, maple and basswood. Acres tillable, 75. Fruit, 60 apple trees. Best adapted to grass, grain, corn and potatoes. Fences, mostly post and wire, good. House, $1\frac{1}{2}$ stories, 10 rooms, fair condition. Outbuildings, barn, 100x30, with basement, nearly new; good silo, 16x28; barn, with basement, 24x60, good condition; pigpen in fair condition. Occupied by tenant. Reason for selling, owner has other farms. Price, \$6,000. Terms, $\frac{1}{3}$ cash, balance on bond and mortgage. Address S. E. Armstrong, Unadilla Forks, N. Y.

TOWN OF WORCESTER

Population 2,185

*No. 667—Farm of 337 acres; 2 miles from Worcester. House and barn old. First-class spring water, also creek. Part cleared, rest being cleared or will be within seven years, as timber has been sold. Would make a good sheep farm. Price, \$5,000. Owner will rent for cash. Address Silas W. Ferguson, Worcester, N. Y.

*No. 668—Farm of 105 acres; 2 miles from Worcester P. O. and station, on D. & H. R. R. Good soil. Sixty acres pasture and meadow. No buildings. Spring water. Price, \$1,500. Terms easy. S. W. Ferguson, owner, Worcester, N. Y.

*No. 669—Farm of 102 acres $2\frac{1}{2}$ miles from East Worcester. Very fine farm for summer home. Ten acres of timber; 50 meadow. Ten room house, excellent condition. Barn, 40x45; stable, 20x30; wagon house, 25x40; several other barns and outbuildings, all good. Well watered and fenced. Price, \$7,000. Address H. L. Reed, agent Amsterdam, N. Y.

No. 670—Farm of $22\frac{1}{2}$ acres; about 3 city blocks from East Worcester P. O. and railway station, on line of D. & H. R. R.; 400 feet from school; 6 city blocks from Methodist and Baptist churches; 5 minutes from butter factory and milk station; 3 miles from cheese factory. Fine road and street. Place located in village, population 600. Surface of farm, part level, part side hill, southern exposure. Altitude, 1,500 feet. Acres in meadow, 10; in timber, 1, young maples; acres tillable, 20. Fruit, 5 choice apple trees, several cider apple trees, 20 young apple trees, pears and cherries. Best adapted to potatoes, hay and corn. Fences, wire and stone. House, 40x40, rebuilt within 2 years, bath, laundry, hot air heater, and all modern improvements. Barn, 23x63, in fine condition, recently rebuilt, new icehouse (filled). Watered, house, by spring; barn, from house; fields, by 4 springs. One mile from Bennetts Lake. Hills surround the village. Owner bought this place 2 years ago and rebuilt it; putting in all modern improvements, including private lighting plant. Village has electric light and water. Occupied by owner. Reason for selling, owner wishes to move on account of ill-health of family. Price, \$4,500. Terms, to suit buyer. Ira Mannory, East Worcester, N. Y. Owner will rent.

No. 671—Farm of 242 acres, located 2 miles from Worcester P. O. and railway station. Soil, sandy loam. House, recently built and in good condition. Outbuildings, good sized barn and wagon house, good condition. Watered by springs and well. Fences, wire and rail. This farm is adapted to general farming and is only 2 miles from one of Borden's first-class creameries. Price, \$4,500. Terms, part cash. Address S. W. Ferguson, Worcester, N. Y.

No. 672—Farm of 50 acres, located in village of Worcester, on line of Susquehanna & D. & H. R. R.; $\frac{1}{4}$ mile from churches; $\frac{1}{8}$ mile from milk condensing plant. Soil, mostly loam. Acres in meadow, 12; in natural pasture, 12. All tillable. Best adapted to corn, oats, wheat, rye, buckwheat, peas and beans. Fences, wire, good. House, nearly new, 11 rooms, 2 stories, bathroom in house. Outbuildings, barn, 30x40; wagonhouse,

* Farm is in hands of agent or real estate dealer.

22x30; beehouse, 12x16; shed, 16x24; Reason for selling, ill health of owner.
icehouse, 12x16. Watered by lake, Price, \$6,000. Terms easy. Address
springs and creek. Occupied by owner. John Howe, Worcester, N. Y.

PUTNAM COUNTY

Area, 241 square miles. Population, 14,665. Annual precipitation, 54.67 inches. Annual mean temperature, 50.8°. Number of farms, 973. County seat, Carmel.

This county is located in the southeastern part of the state bordering on Connecticut. It is bounded on the west by the Hudson river and is drained by the Croton river and Peekskill creek.

The surface is hilly and while it presents scenery only a part of the soil is suitable for farming. The Matteawan and Peekskill mountains extend into the western and central parts of the county, while the Taghkanick Mountains are located in the eastern part. Between these ranges is a valley three or four miles wide with black loam soil. This valley extends from the northern border about half way across the county, then broadens into a wide undulating plain containing black and gravelly loam. In the vicinity of Cold Spring and extending east and north is another valley having a clay loam soil. Among its features of interest are the highlands of the Hudson and Lake Mahopac, a popular summer resort. Marble of excellent quality is extensively quarried and rich mines of iron ore are also found. The leading crops are corn, 124,228 bushels; oats, 19,022 bushels; rye, 4,559 bushels; potatoes, 85,494 bushels; hay and forage, 29,087 tons. Value of all farm property, \$8,851,342; an increase of 14.6 per cent. during the last decade. Domestic animals are as follows: Dairy cows, 8,425; horses, 2,195; swine, 2,392; sheep, 1,220; poultry, 50,167; milk product, 5,080,275 gallons; receipts of dairy products, \$583,016.

The county is traversed by the Harlem and Putnam divisions of the N. Y. C. & H. R. R., and the N. Y., N. H. & H. also passes through a portion of the county. There are 56 district schools. Drew Seminary and Female College is located at Carmel. Cold Spring has a large iron plant. Many poultry farms are located in this district. There are six agricultural organizations in the county, the purpose of which is to promote the farmers' interest.

TOWN OF CARMEL

Population 2,610

* No. 673—Farm of 182½ acres, located 3 miles from Carmel P. O. and railway station, on line of N. Y. C. R. R. State road. Surface of farm rolling. Acres in meadow, 100; in natural pasture, 50; in timber, 30. Acres tillable, 100. Best adapted to hay, grain or garden truck. House, small, fair condition. Outbuildings, good size, fair condition. Watered, house by well and spring, barns by spring, fields by springs and brooks. Occupied by tenant. Reason for selling, owner in other business. Price, \$10,500. Terms, \$5,500 cash, balance on mortgage at 5½%. A fine creek forms entire eastern boundary of farm. Address H. O. Palen, agent, Highland, N. Y.

TOWN OF PHILLIPSTOWN

Population 5,345

No. 674—Farm of 129 acres; 4 miles from Nelsonville P. O., R. D.; 4½ miles from Cold Spring railway station and the Hudson River. State road. Soil, clay loam. Acres in meadow, 80; acres natural pasture, 37; acres timber, 12. House, 56x60, needs some repairing. Barn, 34x43, in fair condition. Watered, by springs and 3 wells. Fences, wall, rail and wire, in fair condition. This farm is near lakes, churches, schools and mills and is located amidst the most beautiful scenery. The land is good and very productive. Would make a beautiful country residence. Price, \$5,500. Terms, easy. Owner will rent. Address George Wright, Cold Spring-on-Hudson, N. Y.

RENSSELAER COUNTY

Area, 650 square miles. Population, 132,276. Annual precipitation, 42.5 inches. Annual mean temperature, 46°. Number of farms, 3,654. County seat, Troy.

This county is favorably located in the eastern part of the state bordering on Massachusetts on the east and the Hudson river on the west.

* Farm is in hands of agent or real estate dealer.



FIG. 14.— BUILDINGS ON FARM 672, TOWN OF WORCESTER, OTSEGO COUNTY.

The surface is mostly hilly and partly mountainous, the Taconic mountains rising to the height of about 2,000 feet in the eastern part of the county. The Hoosic River Valley divides these into separate ranges.

The soil of this valley is clay and gravelly or slaty loam with hardpan subsoil. The range of hills near the center of the county is excellent for pasturage and dairying, the cultivation of potatoes also bringing good returns. The soil of this section is a conglomerate of sandstone and shale. Between these hills and the Hudson River the land is less rolling and general farming is profitably conducted. The reports on the products of the county are as follows: corn, 408,503 bushels; oats, 516,979 bushels; buckwheat, 81,974 bushels; rye, 213,343 bushels; potatoes, 1,142,796 bushels; hay and forage, 96,129 tons. The total value of all farm property is \$18,216,934. This is an increase within the last ten years of 19.1 per cent. The average price of improved land in the county is \$35.86 per acre. The buildings in this county are worth one million dollars more than the land. There are farms that can be bought for less than the value of the buildings. Domestic animals are reported as follows: Dairy cows, 19,804; horses, 8,666; swine, 12,081; sheep, 25,190; poultry, 184,489; total production of milk, 10,901,020 gallons; the receipts from dairy products was \$1,198,481. The county is intersected by the N. Y. C. & H. R. R., Fitchburg and the branches of the D. & H. railroads which center at Troy. The Rensselaer Polytechnic Institute, Emma Willard Female Seminary and a Catholic Theological Seminary are located at Troy. The cities of Troy, Rensselaer and Hoosick Falls lie within the county having a united population of about 100,000 people, and furnish a market for the farm products, while Albany and other nearby cities add to the great market facilities of the county. There are two important electric lines from Rensselaer to Hudson and from Troy to Averill Park in the center of the county. There are numerous lakes, ponds and streams of excellent water affording abundant supply. There are 162 district schools, 75 miles of state and county roads, 1,202 miles of graded and improved highways, leaving only 11 miles of highway in the county not improved. The soil and climate are excellent for growing apples and other fruit. The farmers of the county have organized 12 different societies to further their farming interest.

TOWN OF BERLIN

Population 1,615

* No. 675—Farm of 25 acres, located $1\frac{3}{4}$ miles from South Berlin P. O., $1\frac{1}{2}$ miles from railway station at South Berlin, on line of Rutland Division of N. Y. C. R. R.; $1\frac{1}{2}$ miles from school and milk station; $1\frac{3}{4}$ miles from Protestant churches and creamery. Highways good. Nearest city, Pittsfield, Mass., 17 miles distant, population about 30,000, reached by rail and highway. Surface of farm rolling. Altitude about 1,500 feet. Soil, gravelly loam. Acres in meadow, 12; in natural pasture, 6; in timber, 7, hard wood, good. Acres tillable, 12. Fruit, 40 apple trees, a few plums and pears. Best adapted to corn, potatoes, oats, hay and berries. Fences, wire and board, good. House, 7 rooms. Outbuildings, barn, 20x26, and several other outbuildings, good condition. Watered, house and barn by spring, fields by spring and stream. Occupied by owner. Reason for selling, owner a woman and advanced in age. Price, \$1,-

000. Terms, \$400 cash, balance on mortgage at 5%, easy payments. Address A. O. Mattison, agent, South Berlin, N. Y.

* No. 676—Farm of 127 acres, located $1\frac{1}{4}$ miles from Center Berlin P. O. and railway station, on line of Rutland Division of N. Y. C. R. R.; $1\frac{1}{4}$ miles from school and milk station, 2 miles from Methodist church and creamery. Highways good. Nearest city, Pittsfield, Mass., 19 miles distant, population about 30,000, reached by rail and highway. Surface of farm rolling. Altitude about 1,500 feet. Soil, slate loam. Acres in meadow, 50; in natural pasture, 37; in timber, 40, beech, birch, oak and hemlock. Acres tillable, 50. Fruit, 40 apple trees, a few pears and plums. Best adapted to hay, corn, oats, buckwheat, potatoes and berries. Fences, wire, good. House, 8 rooms and closets, first-class condition. Outbuildings, barn, 24x50; two silos, horse barn, wagon shed, etc. Watered, house and barn by spring,

* Farm is in hands of agent or real estate dealer.

fields by stream. Occupied by owner. Reason for selling, owner has other business. Price, \$2,500. Terms, \$1,250 cash, balance on mortgage at 5%. Address A. O. Mattison, agent, South Berlin, N. Y.

* No. 677—Farm of 240 acres, located $2\frac{1}{2}$ miles from Berlin P. O. and railway station, on line of Rutland Division of N. Y. C. R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from Protestant churches and milk station; 3 miles from cheese factory and milk condensing plant. Highways good. Nearest city, North Adams, Mass., 11 miles distant, population about 25,000, reached by rail and highway. Surface of farm somewhat hilly. Altitude about 1,600 feet. Soil, clay loam. Acres in meadow, 100; in natural pasture, 110; in timber, 30, beech, birch and maple. Acres tillable, 200. Fruit, 100 apple trees, pears, plums and cherries. Best adapted to hay, oats, buckwheat, potatoes and fruit. Fences, wire, good. House, 2 stories, 12 rooms, fine condition. Outbuildings, barn, 34x40; barn, 25x80, good condition. Watered, house by well, barns and fields by stream. Occupied by owner. Reason for selling, ill health of owner. Price, \$5,300. Terms, \$2,500 cash, balance on mortgage. Address A. O. Mattison, agent, South Berlin, N. Y.

* No. 678—Farm of 150 acres, located 2 miles from Berlin P. O. and railway station, on line of Rutland Division of N. Y. C. R. R.; 2 miles from school, churches, cheese factory, milk station and $2\frac{1}{4}$ miles from milk condensing plant. Highways good. Nearest city, Troy, 18 miles distant, population about 80,000, reached by rail and highway. Surface of farm rolling. Altitude about 2,200 feet. Soil, good. Acres in meadow, 50; in natural pasture, 50; in timber, 50, spruce, maple, birch, good quality. Acres tillable, 50. Fruit, 50 apple trees, also pears, plums and cherries. Best adapted to hay, oats, buckwheat, potatoes and berries. Fences, wall and wire, fair condition. House, 7 rooms, fair condition. Outbuildings, barn, 70x25, good condition. Watered, house by well, barn by spring, fields by creek and springs. Farm joins Kendall's Lake. Occupied by owner. Reason for selling, ill health of owner. Price, \$1,300.

Terms, \$600 cash, balance on mortgage at 5%, easy payments. Address A. O. Mattison, agent, South Berlin, N. Y.

* No. 679—Farm of 111 acres, located $2\frac{1}{2}$ miles from Berlin P. O. and railway station, on line of Rutland Division of N. Y. C. R. R.; $\frac{1}{4}$ mile from school; $2\frac{1}{2}$ miles from Protestant churches; $2\frac{1}{4}$ miles from cheese factory and milk condensing plant; $2\frac{1}{2}$ miles from milk station. Highways good. Nearest large village, Williamstown, 7 miles distant, population 3,000, reached by rail and highway. Surface of farm, part level and part hilly. Altitude about 1,500 feet. Soil, clay loam. Acres in meadow, 45; in natural pasture, 40; in timber, 12, maple, beech, oak and birch. Acres tillable, 50. Fruit, 40 apple, 8 cherry, 6 pear and 8 plum trees. Best adapted to corn, oats, buckwheat, potatoes, berries and fruit. Fences, wire, good. House, 8 rooms, several closets, good condition. Outbuildings, barn, 30x40; wagon shed, granary, good condition. Watered, house and barn by spring, fields by brook. Occupied by owner. Reason for selling, ill health of owner. Price, \$1,700. Terms, \$1,000 cash, balance on mortgage. Address A. O. Mattison, agent, South Berlin, N. Y.

* No. 680—Farm of 90 acres, located $\frac{1}{2}$ mile from Berlin P. O. and railway station, on line of Rutland Division of N. Y. C. R. R.; $\frac{1}{2}$ mile from school, churches and milk station; $\frac{3}{4}$ mile from cheese factory and milk condensing plant. Highways, somewhat hilly but good. Nearest city, North Adams, Mass., 13 miles distant, population about 25,000, reached by rail and highway. Surface of farm rolling. Altitude about 1,600 feet. Soil, loam. Acres in meadow, 35; in natural pasture, 30; in timber, 25, beech, maple, basswood and butternut. Acres tillable, 40. Fruit, 50 apple trees, also pears. Adapted to all crops grown in this section. Fences, wire, good. House, 7 rooms and closets, good condition. Outbuildings, barn, 48x22, barn, 24x24, good condition. Watered, house by well, barn and fields by stream. Spring water can easily be piped to house and barn. Occupied by owner. Farm is $\frac{3}{4}$ mile from Kendall's Lake. Reason for selling, owner in other business. Price, \$2,500. Terms, \$1,000 cash,

* Farm is in hands of agent or real estate dealer.

balance on mortgage at 5%. Address A. O. Mattison, agent, South Berlin, N. Y.

* No. 681—Farm of 210 acres; $\frac{1}{2}$ mile from South Berlin P. O.; $\frac{1}{4}$ mile from railway station at South Berlin, on line of Rutland Division of the N. Y. C. R. R.; $\frac{1}{4}$ mile from school; $\frac{1}{2}$ mile from church; $4\frac{1}{2}$ miles from cheese factory and condensing plant; $\frac{1}{2}$ mile from cream station. Highways, good. Nearest city, Pittsfield, Mass., population 25,000, 17 miles distant, reached by rail and highway. Surface, rolling. Soil, gravelly loam. Acres in meadow, 50; in natural pasture, 75; in timber, 85, beech, birch, ash, oak, maple, etc.; acres tillable, 100. About 50 apple trees. Fences, stone and wire. Large, 10-room house, in good condition; large woodhouse attached; open fireplaces. Large barn, in good condition. Watered by spring, in house. One and one-half miles from Taconic Mountains. House is pleasantly located on main highway, fine row of maple shade trees; sugar bush. Occupied by tenant. Reason for selling, owned by two women who cannot work it. Price, \$4,000. Terms, \$2,500 cash, rest on mortgage. Address A. O. Mattison, South Berlin, N. Y.

* No. 682—Farm of 220 acres; 1 mile from Center Berlin P. O.; 1 mile from railway station at Center Berlin, on line of Rutland Division of the N. Y. C. R. R.; 1 mile from school; 3 miles from churches, cheese factory and condensing plant; $3\frac{1}{4}$ miles from cream station. Highways, good, some hilly. Nearest large village, Hoosick Falls, population about 5,500, 16 miles distant, reached by rail and highway. Surface, part hilly and part rolling. Soil, clay and gravelly loam. Acres in meadow, 20; in natural pasture, 90; in timber, 110, beech, birch, oak, maple and some soft timber; acres tillable, 50. Best adapted to hay, oats, potatoes, buckwheat and corn. Fences, wire, good condition. House, 7 rooms, nearly new. Barn, in good condition. Watered by well and brook. Two miles from Taconic Mountains. Occupied by owner. Reason for selling, owner has another farm. Price, \$1,200. Terms, \$500 down, balance on mortgage. This farm has a good lot of timber which is easily accessible, is well

watered and liberal terms will be given. Address A. O. Mattison, South Berlin, N. Y.

* No. 683—Farm of 750 acres; 2 miles from Berlin P. O. and railway station at Berlin, on line of Rutland Division of the N. Y. C. R. R.; 20 rods from school; 2 miles from churches, cheese factory and condensing plant. Highways, good. Nearest large village, Hoosick Falls, population about 5,500, 14 miles distant, reached by rail and highway. Surface, part level, part rolling and part hilly. Soil, gravelly loam. Acres in meadow, 130; in natural pasture, 500; in timber, 100, beech, birch, maple and oak; acres tillable, 500. About 100 apple and pear trees. Best adapted to hay, oats, buckwheat and potatoes. Fences, principally wire. Old-fashioned, low house, 12 rooms, good condition. Cow barn, 40x60, posts 22-foot stanchions and stalls for 60 head of cattle; stone silo, 17x32; horse barn and carriagehouse, 26x42; shed, 30x34, with hay loft connects the main barn with horse barn; barn, 26x26, with room for 16 head of cattle; storehouse for farm machinery; a hoghouse; dairyhouse; icehouse and several other buildings; all well constructed, covered with novelty siding and in good condition. Watered by spring and well. Taconic Mountains, $1\frac{1}{2}$ miles distant. This farm has a sugar bush of 1,000 fine maples and sugar house. Also has over 2 miles of trout brook. Occupied by tenant. Reason for selling, owner has other business. Price, \$6,000. Terms, \$2,500 down, balance on mortgage. Will sell 500 acres of this farm including buildings, sugar bush and a good portion of the timber for \$4,000. Half cash, balance on mortgage. Address A. O. Mattison, South Berlin, N. Y.

* No. 684—Farm of 76 acres; 1 mile from Berlin P. O. and railway station, on line of Rutland Division of N. Y. C. R. R.; 1 mile from school, churches and milk station; $\frac{3}{4}$ mile from cheese factory and milk condensing plant. Highways, somewhat hilly but good. Nearest large village or city, North Adams, Mass., 14 miles distant, population about 25,000, reached by rail and highway. Surface of farm, hilly. Altitude, about 1,400 feet. Soil, limestone, quality good. Acres in meadow, 35; in natural pasture, 16; in timber, 25, nearly all maple;

* Farm is in hands of agent or real estate dealer.

acres tillable, 35. Fruit, 40 apple trees, pears, plums; owner had 40 bushels of plums last year. Adapted to all crops grown in this climate. Fences, board and wire, good. House, large, 11 rooms, good condition. Outbuildings: basement barn, 28x36; barn, 22x32; several other outbuildings; fair condition. Watered, house, by well; barns and fields, by spring. This farm is 1 mile from Lake Kendall. This farm has a fine sugar bush of 1,200 trees and sugar house. Occupied by owner. Reason for selling, owner has other business. Price, \$1,600. Terms, \$800 cash, balance on mortgage. Address A. O. Mattison, agent, South Berlin, N. Y.

TOWN OF EAST GREENBUSH

Population 1,350

No. 685—Farm of 16 acres, located 1 mile from East Greenbush P. O., R. D. 1; about 500 feet from railway station at Troy road, on line of Albany Southern Ry.; 1 mile from school and Protestant churches. Highways, State road. Nearest city, Albany, 3 miles distant, population about 100,000, reached by rail and highway. Surface of farm, nearly level. Altitude, about 500 feet. Soil, clay loam. Acres in meadow 6. All tillable. Fruit, 245 apple, 275 pear, 60 cherry, 8 plum, 10 prunes, 15 peach, 10 crab apples and 8 quince trees, 950 grape vines, also blackberries, black raspberries, strawberries, etc. Fences in good condition. House, 9 rooms, good condition. Outbuildings, ample for size of farm, good condition. Watered, house and barn by well and cistern. Occupied by owner. Price, \$12,000. Terms cash. Address Jesse P. Van Ness, East Greenbush, N. Y.

TOWN OF GRAFTON

Population 1,019

No. 686—Farm of 121 acres; $\frac{1}{2}$ mile from school; 10 miles from railway station, at Troy, on line of H. R. R. R. and D. & H. R. R.; 1 mile from church; 6 miles from butter factory. Highways, good. Surface of farm, rolling. Altitude, about 1,200 feet. Soil, loam and gravel. Acres in meadow, 40; in natural pasture, 31; in timber, 50, hard wood, estimated about 1,000 cords; acres tillable, 30. Fruit, apples, pears, plums, cherries and grapes for family use. Best adapted to grain, potatoes, corn,

etc. Fences, stone and wire, good condition. House, 8 rooms, good condition. Outbuildings: barn, 30x40; horse barn, icehouse, hoghouse, woodhouse, all in good condition. Watered, house, by well; barn and fields, by springs. Occupied by owner. Reason for selling, advanced age and poor health of owner. Price, \$2,000. Terms, cash. Address Nelson Simmons, Cropseyville, N. Y.

No. 687—Farm of 25 acres; $\frac{3}{4}$ mile from Grafton P. O.; 6 miles from railway station at Petersburg, on line of R. & H. R. R.; $\frac{3}{4}$ mile from school and churches. Highways, good. Nearest large village or city, Troy, population about 77,000, 14 miles distant, reached by highway. Surface of farm, rolling. Altitude, 1,700 feet. Soil, loam. Acres in natural pasture, 2; in timber, 23, 70 years' growth of hemlock, spruce, and hard wood. Fences, wire, good condition. No house. Watered by never-failing spring of pure water. Private fish pond could easily be made on place. This would make an ideal place for camp or bungalow. Reason for selling, poor health of owner. Price, \$900. Terms, cash. Address Miss Mary A. Jones, Grafton, N. Y., Box 4.

TOWN OF HOOSICK

Population 8,315

No. 688—Farm of 120 acres; $3\frac{1}{2}$ miles from Hoosick Falls P. O., R. D. 3; $3\frac{1}{2}$ miles from railway station at Hoosick Falls, on line of B. & M. R. R.; $\frac{3}{4}$ mile from school; $3\frac{1}{2}$ miles from churches; 4 miles from butter factory; $3\frac{1}{2}$ miles from milk station. Highways, good. Nearest large village, Hoosick Falls, population 5,500, $3\frac{1}{2}$ miles distant, reached by highway. Surface, rolling. Soil, slate. Acres in meadow, 60; in natural pasture, 35; in timber, 25, oak and pine; acres tillable, 95. Some apple trees. Best adapted to hay, oats, corn, rye, buckwheat, potatoes and beans. Fences, board and braided wire. House, 15 rooms, fair condition. Four barns, hoghouse, cornhouse, henhouse, woolroom, shop, wagonhouse and toolhouse. Watered by cistern and wells. Green Mountains 8 miles, Mt. Anthony 6 miles distant. This property is desirable, being situated on high ground with very fine view. Was settled over 100 years ago by an ancestor of the present owner, and has been handed down from

* Farm is in hands of agent or real estate dealer.

father to son. Occupied by owner. Price, \$5,000. Address Merritt C. Ostrander, Hoosick Falls, N. Y.

No. 689—Farm of 108 acres; 6 miles from Hoosick Falls P. O., R. D. 2; 4 miles from railway station at Hoosick Falls, on line of B. & M. R. R.; 40 rods from school; 100 rods from Methodist church; 4 miles from butter factory and cheese factory. State road soon to be built. Surface of farm, rolling. Soil, loam, with hardpan bottom. Acres in meadow, 60; in natural pasture, 25; in timber, about 15, oak, pine, etc.; acres tillable, 70. Fruit, apples, pears, plums and 15 varieties of grapes. Adapted to all kinds of grain. Fences, wire, fair condition. House, 20 rooms, large enough for 2 families, putting in heating plant, good condition. Also tenant house. Outbuildings: cow barn, 30x50, with basement and shed; horse barn, 28x50, 5 stalls; sheep barn, 28x40, with basement; barn, 54x30, ice house and tank of cement for cooling milk. Watered, house, by running water and well; cow barn, by running water. Reason for selling, poor health of owner. Price, \$6,200. Terms, $\frac{1}{2}$ down, balance on time with good security. Owner has 72-acre hill lot pasture and wood lot combined which he will let go with farm at small price. Address Levi N. Gardner, Hoosick Falls, N. Y., R. D. 2.

TOWN OF NORTH GREENBUSH

Population 1,293

No. 690—Farm of 72 acres; 4 miles from Troy P. O., R. D. 4; 4 miles from railway station at Troy, on line of N. Y. C. R. R.; 1 mile from school; 2 miles from churches. Nearest cities, Troy, about 4 miles distant; Albany, 6 miles distant, reached by State road. Surface of farm, gently sloping. Soil, sand and gravel. Acres in meadow, 10; in timber, 7, oak and other hard wood. Fruit, apples and cherries. Best adapted to potatoes, garden truck and grain. House, 14 rooms, pantry, 2 store rooms, excellent condition. Outbuildings: barn, 40x40; shed, 20x40; good condition. Watered by well and cistern. Hudson River 1 mile from farm, and several small lakes from 3 to 10 miles. Occupied by owner. Reason for selling, owner wants smaller place. Price, \$8,000. Terms cash. Address F. C. Kinney, care Kennedy's Store, Mill Street, Troy, N. Y.

TOWN OF PETERSBURG

Population 1,238

No. 691—Farm of 33 acres; 2 miles from Petersburg P. O., R. D. 1, and railway station, on line of Rutland R. R.; 1 mile from school; 2 miles from churches and butter factory. Highways, somewhat hilly, but good. Nearest large village, Hoosick Falls, population about 5,500, 14 miles distant, reached by rail and highway. Surface of farm, rough. Soil, loam. Acres in meadow, 14; in natural pasture, 4; in timber, 15, beech and maple; acres tillable, 15. Fruit, about 30 trees. Best adapted to potatoes and corn. Fences, in poor condition. House, 26x36, in fair condition. Outbuildings, in poor condition. Watered by spring. Occupied by tenant. Reason for selling, owner has another place. Price, \$1,000. Terms, cash. Address Amanda Littlefield, Petersburg, N. Y. Owner will rent.

No. 692—Farm of 460 acres; 2 miles from Petersburg P. O.; 2 miles from railway station, on line of Rutland R. R.; $\frac{1}{4}$ mile from school; 2 miles from butter factory and milk station; 7 miles from cheese factory and condensing plant. Nearest large village, Hoosick Falls, population 5,500. Highways, sandy. Surface, level and part rolling. Soil, sand and loam. Acres in meadow, 150; in natural pasture, 150; in timber, 160, beech, oak, maple and pine; acres tillable, 250. Fruit, 500 apple trees. Best adapted to corn, potatoes and grain of all kinds. Fences, mostly wire, in good condition. House, 42x30, with 28x30 wing, in good condition; another 2-family house, 40x30. Outbuildings: barns, 40x60 and 18x30; cowbarns, 40x30, 40x50, 38x30 and 124x30; storehouse, 30x40; granary, 30x40; hoghouse, 28x30; blacksmith shop, 16x14. Watered by running stream, brook and springs. Occupied by tenant. Reason for selling, owner has other business. There is also a large silo on this farm. Price \$10,000. Terms, $\frac{1}{3}$ down, balance on mortgage. Address F. E. Reynolds, Petersburg, N. Y.

TOWN OF SAND LAKE

Population 2,128

No. 693—Farm of 146 acres; 3 miles from West Sand Lake P. O., R. D. 1; 9 miles from railway station at Rensselaer, on line of N. Y. C. R. R.; $\frac{1}{2}$ mile

from school; 3 miles from churches. Highways, good. Nearest city, Rensselaer, reached by trolley and State road. Two trolleys within two miles of farm. Surface of farm, rolling. Altitude, about 500 feet. Soil, mostly gravel. Acres in meadow, 20; in natural pasture, 35; in timber, 30, chestnut, oak, hemlock, hickory, etc.; acres tillable, 61. Fruit, apples, pears, peaches, cherries and plums. Best adapted to hay, grain, potatoes, etc. Fences, wire, rail, fair. House, 40x30, 2 stories and attic, brick. Outbuildings: barn, 42x45, shed attached; woodhouse; wagonhouse; storehouse. Watered by well and stream. Occupied by owner. Reason for selling, owner wants to retire. Price, \$50 per acre. Terms, $\frac{1}{2}$ cash. Owner will rent with option to buy. Address David H. Lown, West Sand Lake, N. Y., R. D. 1.

* No. 694—Farm of 40 acres, located $1\frac{1}{2}$ miles from Averill Park P. O. and railway station, on line of New England R. R.; $\frac{1}{2}$ mile from school and churches. Highways in good condition. Nearest city, Troy, 8 miles distant, population about 80,000, reached by rail and highway. Surface of farm, gentle slope. Altitude, 1,000 feet. Soil, strong loam. All tillable. Fruit, apples, pears, plums, cherries, grapes and berries. Best adapted to hay, grain and fruit. Fences, wire, good. House, large, 17 rooms, Colonial, 6 fire places, 4 piazzas, excellent condition. Outbuildings large and good, also shop, 2 stories, could be made into dwelling. Watered by springs. Occupied by owner. Reason for selling, owner wishes to retire from business. Price, \$7,500. Terms, $\frac{1}{2}$ cash. Address Frank H. Knox, agent, 469 State St., Schenectady, N. Y.

TOWN OF SCHAGHTICOKE

Population 2,780

* No. 695—Farm of 137 acres, located $1\frac{1}{2}$ miles from Valley Falls P. O. and railway station, on line of B. & M. R. R.; $\frac{1}{2}$ mile from school and $1\frac{1}{2}$ miles from churches and milk station. Highways in excellent condition. Nearest city, Troy, 12 miles distant, population about 80,000, reached by rail and highway. Surface of farm, gentle slope. Soil, clay loam. All tillable. Fruit, 150 young apple trees, 20 older, plums, cherries and pears. Best adapted

to dairying, hay, grain and potatoes. Fences, wire, good. House, large, modern, 9 rooms with modern plumbing, gravity water supply and electric lights. Outbuildings, one barn, 95x33, slate roof with basement stables; barn, 24x45; barn, 18x24; also henhouse, creamery and tenant house. House and barn have gravity water supply, fields watered by brooks. Occupied by owner. Reason for selling, owner wishes to retire from business. Price \$10,000. Terms, $\frac{1}{3}$ cash. Address Frank H. Knox, agent, 469 State St., Schenectady, N. Y.

* No. 696—Farm of 80 acres, located 2 miles from Troy city line, 6 miles from railway station at Troy, on line of N. Y. C. & D. & H. R. R.; $\frac{1}{4}$ mile from school; 2 miles from churches of all denominations. Highways good. Surface of farm hilly. Soil, clay loam. Acres in meadow, 50; in natural pasture, 30. Acres tillable, 50. Fruit, apples, pears, plums and cherries. Best adapted to hay and dairying. Fences, fair to good. House, 12 rooms, modern, excellent condition. Outbuildings, nearly new barn, sheds, icehouse, etc., all good. Watered, house and barn by well, fields by springs. Occupied by owner and tenant. Reason for selling, ill health of owner. Price, \$6,000. Terms, $\frac{1}{2}$ cash. Address Frank H. Knox, agent, 469 State St., Schenectady, N. Y.

TOWN OF SCHODACK

Population 4,780

No. 697—Attractive bungalow, suitable for summer or winter; 10-minute walk from Brookview Station, on line of the B. & A. R. R.; 8 miles from Albany. Healthful location, 250 feet above the Hudson River. Has 6 rooms with natural wood finish throughout; concrete cellar; 2 piazzas; large filter cistern in cellar. Good-sized lot. Brookview has post office, church, school, general store, station and good train service. Commutation rate from Albany as low as 11 cents. Owner will rent with option to buy. Address, for further information, Miss Atwood, 382 Morris St., Albany, N. Y.

No. 698—Farm of 265 acres; 4 miles from Castleton P. O.; 1 mile from railway station at Van Hoesen, on line of

* Farm is in hands of agent or real estate dealer.



FIG. 15.—HOUSE ON FARM 732, TOWN OF CHARLTON, SARATOGA COUNTY.



FIG. 16.—HOUSE ON FARM 977, TOWN OF MARBLETOWN, ULSTER COUNTY.

B. & A. R. R.; 1 mile from school. Nearest large village, Castleton, population 2,500, 10 miles from Albany, 18 miles from Troy. Highways, good, $\frac{1}{4}$ mile from State road. Surface, rolling. Soil, gravelly and sandy loam. Acres in meadow, 75; in natural pasture, 15; in timber, 35, second growth chestnut, pine, hemlock and oak; acres tillable, 215. Fruit of all kinds, 150 apple trees. Best adapted to grain, hay, potatoes, corn, etc. Fences, 75 acres fenced, in good condition. Houses: one of 3 rooms, in fair condition; another of 17 rooms, in excellent condition; and another of 9 rooms, in good condition, newly painted. Outbuildings, barn, 120x40, with 28-foot posts, new roof; one 30x40, with 18-foot posts; and another 24x40, new roof; all other necessary outbuildings, in good condition. Watered by 2 cisterns, 5 wells, windmill and stream. This property is 4 miles from Hudson River. There are 30 to 40 acres of moulding sand on this farm that can be sold if desired. Occupied by owner and tenant. Reason for selling, owner has other business. Price and terms made known upon application. Address Edson W. Masten, Castleton, N. Y.

No. 699—Farm of 105 acres, located $\frac{1}{8}$ mile from Brookview P. O., $\frac{1}{16}$ mile from railway station at Brookview, on line of Boston & Albany; $\frac{1}{4}$ mile from school; $\frac{1}{8}$ mile from Protestant church; $\frac{1}{16}$ mile from milk station. Highways good. Nearest city, Albany, 9 miles distant, population about 100,000, reached by rail and highway. Surface of farm, chiefly hilly, some level. Soil, mostly gravel loam. Acres in meadow, 20; in natural pasture, 30; in timber, 5, hard and soft. Acres tillable, 50. Fruit, 150 apple trees, 14 pear trees, 7 peach trees and 12 cherry trees. Best adapted to hay and grain. Fences, barbed wire, fair condition. House, old but in good condition, 13 rooms, arranged for two families. Outbuildings, two barns, one in good condition and one with poor roof; hoghouse, poor condition; good corn crib; good woodshed. Watered, house by well and cistern, barn by well, fields by creek. Occupied by tenant. Reason for selling, ill health in family. Price, \$8,000. Terms, \$2,500 down, balance on yearly payments of \$300 at 5%. Ad-

dress Miss Mary L. Sutliff, New York Public Library School, 476 Fifth Ave., New York City.

TOWN OF STEPHENTOWN

Population 1,289

No. 700—Farm of 160 acres; 1 mile from Garfield P. O.; 2 miles from Stephentown station. Forty acres timber; balance meadow and pasture. Good stock and grain farm. Nine-room house, 2 large barns, all in good repair. Spring water. Price, \$3,000. Terms, easy. Owner will rent. Address T. R. Clark, Lebanon Springs, N. Y.

* No. 701—Farm of 300 acres; 1 mile from North Stephentown P. O.; $1\frac{1}{4}$ miles from railway station at North Stephentown, on Rutland Division of N. Y. C. R. R.; $\frac{3}{4}$ mile from school; 3 miles from church and milk station. Highways, good. Nearest city, Pittsfield, Mass., population about 25,000, 12 miles distant, reached by rail and highway. Surface of farm, smooth and rolling. Altitude, 1,500 feet. Soil, gravelly loam. good. Acres in meadow, 90; in natural pasture, 60; in timber, 150, hard wood; acres tillable, 125. Fruit, 40 apple trees in good bearing, 15 pear trees in good bearing. Adapted to any crop grown in this climate. Fences, wire, good condition. House, old-fashioned, 6 rooms. Barn, 40x60, with basement, nearly new. Watered by spring and brook. Taconic Mountains are $\frac{1}{2}$ mile from farm. Occupied by owner. Reason for selling, owner has 3 other large farms. Price, \$3,500. Terms, \$1,500 cash, balance on mortgage. There is a timber tract adjoining, 650 acres, price \$2,500, would make good game preserve. Address A. O. Mattison, agent, South Berlin, N. Y.

No. 702—Farm of 200 acres, located 1 mile from Stephentown P. O., 2 miles from railway station, on line of Rutland Railroad. Acres in meadow, 75; in natural pasture, 50; in timber, 75. Acres tillable, 120. Fruit, 150 trees. Occupied by owner. Fences in fair condition. House and barn in good repair. Watered by well. Price, \$2,500. Address Mrs. Mary Robinson, North Stephentown, N. Y.

* Farm is in hands of agent or real estate dealer.

* No. 703—Farm of 81 acres, located $\frac{1}{4}$ mile from North Stephentown P. O. and railway station, on line of Rutland Division of N. Y. C. R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from Protestant church and creamery, $\frac{1}{4}$ mile from milk station. Highways good. Nearest city, Pittsfield, 12 miles distant, population about 30,000, reached by rail and highway. Surface of farm rolling. Soil, gravelly loam. Acres in meadow, 40; in natural pasture, 25; in timber, 10, principally hemlock. Acres tillable, 60. Fruit, 50 apple trees, also pears, cherries and plums. Best adapted to corn, oats, hay, buckwheat, potatoes, berries and fruit. Fences, wire, good. House, 8 rooms, good condition, slate roof. Outbuildings, barn, 28x40; barn, 20x30; horse barn, carriagehouse, etc. Watered, house by well, barn and fields by brook. Occupied by owner. Reason for selling, owner has other business. Price, \$3,000. Terms, \$1,500 cash, balance on mortgage. Address A. O. Mattison, agent, South Berlin, N. Y.

* No. 704—Farm of 200 acres, located 1 mile from North Stephentown P. O.; $1\frac{3}{4}$ miles from railway station, on line of Rutland Division of N. Y. C. R. R.; $\frac{3}{4}$ mile from school; 2 miles from Catholic church, Protestant churches, butter factory and milk station. Highways, somewhat hilly but good. Nearest city, Pittsfield, 12 miles distant, population about 30,000, reached by rail and highway. Surface of farm rolling. Altitude about 1,500 feet. Soil, loam. Acres in meadow, 60; in natural pasture, 75; in timber, 65, maple, beech, birch, first and second growth. Acres tillable 80. Fruit, 200 apple trees, also pears, plums and cherries. Best adapted to hay, oats, corn, potatoes, buckwheat and berries. Fences, wire and board, good condition. House, 10 rooms, good condition. Outbuildings, 3 barns, wagonhouse, granary, all good size and in good condition. Watered, house by well, barns by brook, fields by brook and springs. Occupied by owner. Reason for selling, owner a widow. Price, \$2,200. Terms, \$500 cash, balance on mortgage at 5%, easy payments. Address A. O. Mattison, agent, South Berlin, N. Y.

* No. 705—Place of 3 acres, located $\frac{3}{4}$ mile from North Stephentown P. O., 20 rods from railway station at North Stephentown, on line of Rutland Division of N. Y. C. R. R.; 1 mile from school; 3 miles from creamery, Protestant and Catholic churches. Highways good. Nearest city, Pittsfield, Mass., 12 miles distant, population about 30,000, reached by rail and highway. Surface of farm level. Altitude about 1,200 feet. Soil, loam. Acres in meadow, 3. All tillable. A few fruit trees. Best adapted to hay and berries. Fences, wire and board. House, 15 rooms, first-class condition. Outbuildings, small barn, poor condition. Watered, house and barn by well, fields by stream. Occupied by owner. Reason for selling, owner a widow. Price, \$1,200. Terms, \$600 cash, balance on mortgage at 5%. This place is bounded on one side by fine trout brook. Address A. O. Mattison, agent, South Berlin, N. Y.

* No. 706—Farm of 140 acres, located $3\frac{1}{2}$ miles from South Berlin P. O., $3\frac{1}{4}$ miles from railway station at South Berlin, on line of Rutland Division of N. Y. C. R. R.; $\frac{1}{2}$ mile from school; $3\frac{1}{2}$ miles from creamery and church; $3\frac{1}{4}$ miles from milk station. Highways, somewhat hilly but good. Nearest city, Pittsfield, Mass., 17 miles distant, population 30,000, reached by rail and highway. Surface of farm rough. Altitude 1,700 feet. Soil, limestone. Acres in meadow, 35; in natural pasture, 20; in timber, 85, maple, beech, birch and spruce. Acres tillable, 40. Fruit, 40 apple trees, also a few plums. Best adapted to hay, oats, buckwheat, potatoes and berries. Fences, wire, fair condition. House, 8 rooms. Outbuildings, barn, 26x36; shed, 24x16. Watered, house by spring, barn and fields by stream. Occupied by owner. Reason for selling, advanced age and poor health of owner. Price, \$1,100. Terms, \$500 cash, balance on mortgage at 5%. There are 70 acres adjoining this farm with a barn and a few acres of cleared land that the owner will sell for \$300. Address A. O. Mattison, agent, South Berlin, N. Y.

* Farm is in hands of agent or real estate dealer.

ROCKLAND COUNTY

Area, 200 square miles. Population, 46,875. Annual precipitation, 51.73 inches. Annual mean temperature, 48°. Number of farms, 1,133. County seat, New City.

This county is located in the southeastern part of the state bordering on New Jersey. The Hudson river forms its boundary on the east and it is drained by the Ramapo and Hackensack Rivers.

The surface is mostly hilly or mountainous. In the western part are found the Ramapo Mountains which are steep, rocky and barren. The southern part of the county and the level valley of the Hackensack River lying back of the Highlands of the Hudson contain a very fertile soil of sandy loam and in this locality dairying, poultry raising and vegetable and small fruit growing are conducted with great profit. Extensive deposits of clay and sand are found along the shores of the Hudson and brick-making is a leading industry. The crops reported are as follows: Corn, 81,576 bushels; oats, 17,680 bushels; rye, 13,826 bushels; potatoes, 66,909 bushels; hay and forage, 11,224 tons. The value of all farm property is \$11,194,649, an increase of 98.9 per cent. over the value of 1900. This increase of \$58.70 per acre represents the largest per cent. of gain in farm property of any county in the state, except Westchester. The average value of improved land in the county is \$185 per acre. Domestic animals on 958 farms are as follows: dairy cows, 2,268; horses, 2,040; swine, 1,200; sheep, 421; poultry, 71,792; product of milk, 1,140,804 gallons, which sold for \$148,179. There are no milk stations or factories in the county, the milk being shipped direct to New York City, which is only 32 miles from the county seat. Much trap rock is quarried in this region where it is crushed for use in road making or mixed with cement for concrete structures. There are 47 district schools in the county. The agricultural organizations consist of one grange, one county agricultural association and a county industrial association.

(No farms reported for sale in this county)

ST. LAWRENCE COUNTY

Area, 2,926 square miles. Population, 89,005. Annual precipitation, 34.85 inches. Annual mean temperature, 49.3°. Number of farms, 8,224. County seat, Canton.

This county is located in the northern part of the state bounded on the northwest by the St. Lawrence River which separates it from Canada. The land area in this county is the largest in the state. It is intersected by Indian, Grass, Oswegatchie, Raquette and St. Regis Rivers.

The surface is mostly hilly except a strip about eighteen miles wide which extends along the St. Lawrence River, the soil of which is rich clay loam. In the southeast section are the foothills of the Adirondacks, which consists of a series of hills and deep valleys. In these valleys we find a dark slaty and gravelly loam. The hills extend in broad ridges, the soil of which is a fertile clay loam. About 700,000 acres in the county are covered with forests of pine, sugar maple, oak, birch, elm, beech, and other trees. Among the minerals are granite, iron ore, lead, limestone and Potsdam sandstone. Among the crops produced in this county are corn, 315,811 bushels; oats, 1,792,670 bushels; potatoes, 1,184,162 bushels; barley, 75,975 bushels; buckwheat, 63,916 bushels; hay and forage, 412,612 tons. The value of all farm property, improvements, tools and live stock is \$49,975,175. This represents an increase of 39.6 per cent. over the valuation shown in 1900. The average value of improved land per acre is \$36.39. The number of domestic animals are dairy cows, 100,537; horses, 22,665; swine, 33,935; sheep, 18,513; poultry, 315,991. The county leads in the production of milk, hay and forage; the production of the former being 47,654,538 gallons, the value of which with the products of 158 milk stations and factories was \$4,435,441. Lumber is one of the chief exports as is also maple sugar. The county is intersected by the Central Vermont, R., W. & O. and Grand Trunk railroads. At Canton is located the St. Lawrence University (Universalist). A state normal school is located at Potsdam. Massena Springs is a well known watering place. The large towns and the numerous smaller villages with many manufacturing towns in New England and New York City furnish unlimited markets for all the products. There are 375 district schools in the county, 69 miles of state and county roads, 3,149 miles of other improved highways, and 46 agricultural organizations conserve the agricultural interest of the county.

TOWN OF CANTON

Population 6,151

No. 707—Farm of 140 acres; $\frac{3}{4}$ mile from Eddy P. O.; 4 trains on N. Y. C. stop daily within 40 rods of house. Highways, good; State road. Clay loam soil. Acres in meadow, 70; natural pasture, 7; timber, 20, maple and beech; acres tillable, 120. Fruit, apples, also currants and berries. Occupied by tenant. Fences, woven wire and rail, good condition. House, 19x30, good cellar, good condition. Large barn, 126 feet long, with stable underneath, cement floor, granary, and new milk house with cement floor, in good condition. Watered by well and brook. This farm will keep 30 cows and team of horses and have hay to sell. For price and terms, address, C. T. Humphrey, Madrid, N. Y.

* No. 708—Farm of 76 acres, located $4\frac{1}{4}$ miles from Canton P. O., R. D. 2 and railway station, on line of R. W. & O. Div. N. Y. C. R. R.; $\frac{1}{4}$ mile from school; 2 miles from Methodist church; $4\frac{1}{4}$ miles from other churches, milk station and milk condensing plant, $1\frac{1}{4}$ miles from butter and cheese factory. Highways good. Surface of farm, crop lands level, pasture lands slightly hilly. Soil, chiefly black muck and fine sand. Acres in meadow, 30; in natural pasture, 26; in timber, 20, 150 to 200 sugar maples, black ash, beech, hemlock, elm and birch. Acres tillable, 55. Fruit, apples. Best adapted to barley, oats, corn, hay and potatoes. Fences, line fences mostly rail, balance wire, fair condition. House, main part, 22x30, with wing, 18x28, $1\frac{1}{2}$ stories, 10 rooms, brick, fair condition, woodhouse, 16x24. Outbuildings, barn, 36x54, fair condition; storehouse, 16x20, and storehouse and sty, 18x24, poor condition. Watered, house and barn by well, fields by stream. Reason for selling, to close an estate. Price, \$50 per acre. Terms, small payment down, balance to suit purchaser. Address E. S. Hart, agent, 513 Navy Annex, Washington, D. C. Owners will rent with option to buy.

TOWN OF CLARE

Population 420

No. 709—Farm of 25 acres, located 2 miles from Degrasse P. O., 20 miles from railway station at Canton, on line of

N. Y. C. R. R.; $\frac{1}{2}$ mile from school; 2 miles from church and cheese factory. Highways good. Surface of farm, rolling. Soil, sandy loam. Acres in meadow, 10; in natural pasture, 15. Acres tillable, 10. Best adapted to potatoes, corn, oats and vegetables. Fences, wire, good condition. House, 18x24. Barn, 20x30. Watered by spring. Branch of La Grasse River borders on back of farm. Occupied by owner. Reason for selling, poor health. Price, \$850. Terms, cash. Address D. N. Dean, Degrasse, N. Y.

TOWN OF DEPEYSTER

Population 907

* No. 710—Farm of 178 acres; 8 miles from railway station at Heuvelton, on line of N. Y. C. & H. R. R. R.; $\frac{1}{2}$ mile from school; 4 miles from churches; $1\frac{1}{4}$ miles from butter factory and cheese factory. Highways, good. Nearest city, Ogdensburg, population 16,000, 20 miles distant, reached by highway. Surface of farm, level. Soil, clay. Acres in meadow, 100; in natural pasture, 10; in timber, 10; all tillable except woodland. A few apple trees. Best adapted to timothy, clover, oats and grain. Fences, good. House, 8 rooms, nearly new. Barns: cow barn, 50x60, just remodeled, basement 32x60, cement floor; horse barn, 25x40, with large leanto. Watered, house and barn, by well; fields, by springs. Two miles from Black Lake. Owner will leave hay, straw and fodder; will sell 30 cows separately. Occupied by tenant. Reason for selling, owner wishes to retire. Price, \$10,000. Terms, \$3,000 cash, balance at 5%. Address J. H. McLearn, Gouverneur, N. Y.

TOWN OF EDWARDS

Population 1,387

No. 711—Farm of 139 acres, located 2 miles from Edwards P. O., $2\frac{1}{2}$ miles from railway station at Edwards, on branch of N. Y. C. R. R.; $1\frac{1}{2}$ miles from school; 2 miles from churches and cheese factory; $2\frac{1}{2}$ miles from milk station; 8 miles from milk condensing plant. Highways, good. Nearest large village, Gouverneur, 17 miles distant, population 5,000, reached by rail and highway. Surface of farm hilly. Soil, clay loam. Acres in meadow, 50; in natural pasture, 100, in timber, 39, hard

* Farm is in hands of agent or real estate dealer.

wood. Acres tillable, 40. Best adapted to hay, oats, potatoes and corn. Fences, rail and wire. House, 20x28, fair condition. Outbuildings, barn, 40x80, good condition. Watered, house and barn by spring, fields by spring and creek. Occupied by tenant. Reason for selling, owner desires to move to village. Price, \$5,500, with stock. Terms, $\frac{1}{2}$ cash. Address Mary M. Davis, Edwards, N. Y.

TOWN OF FOWLER

Population 1,655

*No. 712—Farm of 81 acres, located 3 miles from Gouverneur P. O., 1 mile from railway station at Hailesboro, on line of N. Y. C. R. R.; 1 mile from cheese and butter factory. Highways good. Surface of farm, part rolling, part rough. Soil, clay. Acres tillable, about 40. Fruit, a few apples. Best adapted to corn, oats, wheat and potatoes. Fences, fair condition. House, large, good condition. Outbuildings in good condition. Watered by well. Occupied by owner. Reason for selling, owner desires larger farm. Price, \$6,000, including 10 cows and farming tools. Address J. H. McLear, agent, Gouverneur, N. Y.

*No. 713—Farm of 108 acres; 2 miles from Hailesboro P. O. and railway station, on line of N. Y. C. R. R.; 2 miles from school; 4 miles from churches; 2 miles from cheese factory; 4 miles from milk station and condensing plant. Highways, good. Nearest large village, Gouverneur, population 5,000, 4 miles distant, reached by rail or highway. Surface, rolling. Soil, clay loam. Acres in meadow, 50; in natural pasture, 58; acres tillable, 100. Best adapted to general farming, hay, corn, small grain, etc. Ten-room house, good cellar, all in good condition. Barns, fairly good condition. House watered by wells; barn and fields, by springs. Occupied by owner. Purchasing price includes dairy. Reason for selling, owner desires larger farm. Price, \$7,000. Address J. H. McLear, agent, Gouverneur, N. Y.

*No. 714—Farm of 237 acres, located 8 miles from Gouverneur P. O., 4 miles from railway station at York, on line of N. Y. C. R. R. Highways good. Surface of farm, part rolling, part rough. Soil, clay. Acres tillable, about 100.

Fruit, a few apples. Best adapted to corn, oats, wheat and potatoes. Fences in good condition. House, large, good condition. Outbuildings, large barns, good condition. Watered by springs. Occupied by tenant. Reason for selling, owner desires to retire from business. Price, \$12,000, including 30 cows, bull, hay, straw and corn fodder. Address J. H. McLear, agent, Gouverneur, N. Y.

*No. 715—Farm of 140 acres, located 4 miles from Gouverneur P. O., $2\frac{1}{2}$ miles from railway station at Hailesboro, on line of N. Y. C. R. R. Highways good. Surface of farm rolling. Soil, clay and muck. Acres tillable, 60. Fruit, a few apples. Best adapted to corn, oats, wheat and potatoes. Fences, good condition. House, 15 rooms, good condition. Outbuildings, cow barn, 40x80, with leanto, 14x80. Watered by well. Occupied by tenant. Reason for selling, owner desires to retire from business. Price, \$7,500, including 19 cows, some farming tools, hay, straw and fodder. Address J. H. McLear, agent, Gouverneur, N. Y.

TOWN OF GOUVERNEUR

Population 6,020

*No. 716—Farm of 169 acres; $1\frac{1}{2}$ miles from Gouverneur P. O. and railway station, on line of N. Y. C. R. R.; $1\frac{1}{2}$ miles from school, churches, cheese factory, milk station and condensing plant. Highways, excellent. Nearest village, Gouverneur, population 5,000, $1\frac{1}{2}$ miles distant, reached by highway. Surface, rolling. Soil, clay loam. Acres in meadow, 169. Acres tillable, 169. Best adapted to general farming, hay, clover, corn, small grain, etc. Fences, in good condition. House, in good condition. Barns, in good condition. House and barns watered by wells; fields, by springs. Purchasing price includes dairy. Occupied by owner. Reason for selling, owner cannot work so much land. Price, \$12,000. Address J. H. McLear, agent, Gouverneur, N. Y.

*No. 717—Farm of 100 acres; 1 mile from Gouverneur P. O. and railway station, on line of N. Y. C. R. R.; 1 mile from school and churches, cheese factory, milk station and condensing plant. Highways, excellent. Nearest village, Gouverneur, population 5,000, 1 mile dis-

* Farm is in hands of agent or real estate dealer.

tant, reached by highway. Surface, rolling. Soil, clay loam. Acres in meadow, 100; acres tillable, 100. Best adapted to general farming, hay, corn, small grains, etc. Fences, in good condition. House, in good condition. Barns, in poor condition. House watered by well; fields, by 2 springs. Creek through farm. Purchasing price includes dairy. Occupied by owner. Reason for selling, ill health of owner. Price, \$8,000. Address J. H. McLear, agent, Gouverneur, N. Y.

*No. 718—Farm of 93 acres; $\frac{1}{2}$ mile from Gouverneur P. O., R. D. 4; $\frac{3}{4}$ mile from railway station at Gouverneur, on line of N. Y. C. R. R.; $\frac{3}{4}$ mile from school and churches; $\frac{1}{2}$ mile from butter and cheese factory and milk station. Highways, excellent. Nearest large village, Gouverneur, population 5,000, $\frac{1}{2}$ mile distant, reached by highway. Surface, level. Acres in meadow, 60; in natural pasture, 33; acres tillable, 60. Best adapted to general farming, hay, oats, etc. Fences, mostly wire, in good condition. House, 24x36, in good condition. Barn, about 36x60, fair condition. Watered, house and barns, by wells; fields, by springs. Occupied by tenant. Excellent location, near best town in northern New York. Good markets. Reason for selling, to realize money for business enterprise. Price, \$8,000. Terms, \$1,500 to \$2,000 cash, balance on easy terms. Address J. H. McLear, agent, Gouverneur, N. Y.

*No. 719—Farm of 336 acres; 6 miles from Gouverneur P. O.; 6 miles from railway station at Gouverneur, on line of N. Y. C. & H. R. R. R.; milk taken to milk station from door. Highways, State road. Nearest village, Gouverneur, population 5,000, 6 miles distant, reached by highway. Surface of farm, hilly and rolling. Soil, clay loam. Acres in meadow, 175; in timber, 161; acres tillable, 175. A few apple trees. Best adapted to timothy, clover, oats and grain. Fences, in good condition. Large house in good repair; also a 6-room tenant house. Cow barn, 40x65; horse barn, 30x40, 3 stories high; milk-house, hogpen; all in good repair. Watered, house and barns, by well; fields, by springs and river. Will leave 30 cows, hay, straw, fodder and some farming tools. Near Oswegatchie River.

Occupied by tenant. Price, \$12,000. Terms, \$2,500 cash, balance, easy, 5%. Address J. H. McLear, agent, Gouverneur, N. Y.

TOWN OF MACOMB

Population 1,168

*No. 720—Farm of 160 acres; $\frac{3}{4}$ mile from Brasie Corners P. O.; 7 miles from railway station at Gouverneur, on line of N. Y. C. R. R.; $\frac{3}{4}$ mile from school and churches; $\frac{1}{2}$ mile from cheese factory. Highways, good. Nearest village, Gouverneur, population 5,000, 7 miles distant, reached by highway. Surface, rolling. Soil, clay loam. Acres tillable, 160. Best adapted to general farming, hay, corn, small grains, etc. Fences, good. Good house, furnace and cistern in cellar. Horse barn, 28x32; cow barn, 45x50, with basement stable, in good repair. House watered by well; fields, by springs. Occupied by tenant. Purchasing price includes dairy. Reason for selling, to realize money for business enterprise. Price, \$8,500. Will trade for other property. Address J. H. McLear, agent, Gouverneur, N. Y.

TOWN OF MADRID

Population 1,457

No. 721—Farm of 164 acres, located about 1 mile from Madrid P. O., R. D. 2, 1 mile from railway station at Madrid Springs, on line of Rutland R. R.; 1 mile from school, churches, butter factory and milk station; 7 miles from cheese factory; 10 miles from milk condensing plant. Highways good. Nearest city, Ogdensburg, 17 miles distant, reached by rail and highway. Surface of farm level and slightly sloping. Altitude about 300 feet. Soil, loam. Acres in timber, 32, 7 acres of which are fine sugar bush, remainder elm, pine, ash, cedar, spruce, oak, basswood, beech and birch, first and second growth. Acres tillable, about 40. Fruit, 50 apple trees, also grapes and small fruit. Best adapted to dairying, hay, corn, barley, wheat, buckwheat, potatoes, etc. Fences, stone and rail, good condition. House, $1\frac{1}{2}$ stories, 11 rooms and large wood shed attached, good condition. Out-buildings, barn, $45\frac{1}{2}$ x100, built in 1898, shed attached, one old barn, granary, hog and henhouse, storehouse with smaller woodshed attached and sugar-

* Farm is in hands of agent or real estate dealer.

house. Watered, house by well and cistern, barn by well, fields by springs. Occupied by tenant. Reason for selling, ill health of owner. Price, \$66 per acre. Terms, $\frac{1}{2}$ cash, balance on mortgage at 5%. Address Mrs. Agnes E. Hall, Madrid, N. Y.

TOWN OF OSWEGATCHIE

Population 2,235

*No. 722—Farm of 108 acres, located $2\frac{3}{4}$ miles from Ogdensburg P. O. and railway station, on line of N. Y. C. R. R.; 1 mile from school; $2\frac{3}{4}$ miles from Catholic and Protestant churches; 2 miles from butter factory and cheese factory. Highways, State road. Surface of farm, slightly rolling, enough for drainage. Soil, clay loam. Acres in timber, 10, elm and ash, second growth; acres tillable, 95. Fruit, small apple orchard. Best adapted to hay, grain, corn and potatoes. Fences, rail and wire, good condition. House, 8 rooms, recently remodelled. Outbuildings, barn, 36x52, carriagehouse, 14x30, cement floors in both, henhouse, new silo. Watered by well. Occupied by owner. Price, \$7,500. Terms, \$3,500 down. This is a good hay and dairy farm, well located, within 2 miles of the city limits of Ogdensburg, suitably located for running a milk route or for the sale of milk to milk dealers. Address W. Jay Russell, agent, Ogdensburg, N. Y.

*No. 723—Farm of 96 acres, located 5 miles from Ogdensburg P. O. and railway station, on line of N. Y. C. R. R.; $\frac{1}{4}$ mile from school; $2\frac{1}{2}$ miles from churches; 2 miles from cheese factory and milk station. Highways, mostly gravel, improved. Soil, slightly rolling, enough for drainage. Soil, clay loam, some stone. Acres tillable, 90. Fruit, 2 apple orchards. Best adapted to hay, corn, grain, potatoes, general dairy crops. Fences, rail, wire and wall, fair condition. House, 9 rooms, old style. Outbuildings, cow barn, 30x96, cement floor in stable, silo, horse barn, 24x45, henhouse, hogpen and machinery shed. Watered, house and barns by wells, fields by spring. Occupied by owner. Reason for selling, owner wants smaller farm. Price, \$4,500. Terms, \$2,300 down. Owner will sell dairy, tools and fodder at a nominal price if purchaser

desires. Address W. Jay Russell, agent, Ogdensburg, N. Y.

*No. 724—Farm of 75 acres, located 9 miles from Ogdensburg P. O., 4 miles from railway station at Morristown, on line of N. Y. C. R. R.; $\frac{3}{4}$ mile from school and Methodist church; 1 mile from cheese factory; 4 miles from milk station. Highways good. Surface of farm, slightly rolling. Soil, 20 acres flat in which there are some stumps, balance gravel and clay loam. Acres in meadow, 48, in timber 1, second growth. Acres tillable, 54. Best adapted to hay, corn, grain, potatoes, etc. Fences, rail and stone wall, some wire. House, 7 rooms. Outbuildings, main barn, 34x52, stanchions for 18 cows; horse barn, 36x26; hay barn, 30x40; hogpen, henhouse, etc., barn needs some repairs. Watered by wells. This farm is $1\frac{1}{4}$ miles from St. Lawrence River. Unoccupied. Reason for selling, to close an estate. Price, \$3,500. Terms, \$1,750 down. Address W. Jay Russell, agent, Ogdensburg, N. Y.

No. 725—Farm of 54 acres, located 8 miles from Ogdensburg P. O., R. D. 2; $4\frac{1}{2}$ miles from railway station at Morristown, on line of N. Y. C. & H. R. R. R.; 1 mile from school; 1 mile from Methodist church; $1\frac{1}{4}$ miles from cheese factory; 4 miles from milk station. Highways, gravel, macadamized and State road. Nearest village, Morristown, population 1,500, $4\frac{1}{2}$ miles distant; nearest city, Ogdensburg, population 16,000, $8\frac{1}{2}$ miles distant, reached by highway. Surface of farm, just enough slope for drainage. Soil, clay and gravelly loam. Acres in meadow, 25; in natural pasture, 10; in timber, 12, maple, second growth, elm; acres tillable, 38. Fruit, apples, pears, currants. Best adapted to corn, oats, hay, potatoes, fruits. Fences, rail, wire and stone. House, 8-room, galvanized roof, painted inside and out 2 years ago. Good-sized barn, stanchions for 10 cows, stalls for 3 horses, cement floor in cow stable, henhouse, granary. Watered by well. $1\frac{1}{4}$ miles from St. Lawrence River; $3\frac{1}{4}$ miles from Black Lake. Occupied by owner. Reason for selling, owner wishes to move to city. Price, \$3,000. Terms, \$1,500 cash. Will include 6 cows, team, tools, fodder for \$3,600. Address Robert L. Smithers, Ogdensburg, N. Y., R. D. 2.

*Farm is in hands of agent or real estate dealer.

TOWN OF PARISHVILLE

Population 1,785

No. 726—Farm of 498 acres, 5 miles from Potsdam, R. D. Good, rich soil. Sixty acres of timber. A fine farm in good location. Large, stone house, in good repair. Main barn, 165 feet long; several other barns and outbuildings, all good; 5 milking machines and gas engine. Watered by springs. Well fenced. Price, \$20,000. Address P. J. Clark, Parishville, N. Y.

No. 727—Farm of 180 acres, located $2\frac{1}{2}$ miles from Parishville P. O., R. D. 1, 11 miles from railway station at Potsdam, on line of N. Y. C. R. R.; 1 mile from school; $2\frac{1}{2}$ miles from churches; 3 miles from butter factory, cream taken at door; 11 miles from milk station. Highways, somewhat hilly but good. Surface of farm, part level and part rolling. Altitude 780 ft. Soil, light and heavy loam. Acres in meadow, 50; in natural pasture, 120; in timber, 40, hemlock, spruce, pine, cedar and 400 maple trees. Acres tillable, 100. Fruit, 35 apple trees, also strawberries. Adapted to any crops grown in northern New York. Fences good. House, $25 \times 38\frac{1}{2}$, kitchen and wood house, 20×36 ; store, 15×24 ; fair condition. Outbuildings, barn, 46×81 ; barn, 30×40 ; barn, 20×30 ; barn, 24×36 , fair condition. Watered, house and barns by spring, fields by trout brook. Occupied by owner. Reason for selling, owner has other business. Price, \$25 per acre. Terms, $\frac{1}{2}$ cash, balance on time. Address O. H. Capell & Son, Parishville, N. Y., R. D. 1.

TOWN OF PIERCEFIELD

Population 770

No. 728—Farm of 40 acres; $\frac{1}{2}$ mile from Childwold P. O.; 9 miles from rail-

way station, on line of Mohawk & Malone R. R.; $\frac{1}{2}$ mile from school; $\frac{1}{8}$ mile from church. Highways, good. Nearest large village, Tupper Lake, population 3,500, 15 miles distant, reached by highway. Surface, level. Soil, dark loam. Acres in meadow, 15; natural pasture, 5; timber, 20, hard wood; acres tillable, 15. Fruit, 30 apple trees. Best adapted to potatoes, oats, hay and garden truck. Fences, barbed wire, good condition. House, 20×36 ; wing, 17×27 , good condition. Outbuildings: barn, 31×42 ; barn, 14×27 ; 2 hogpens; henhouse; all in good condition. Watered by well and springs. $1\frac{1}{2}$ miles from Moosehead Mountain. Occupied by owner. Reason for selling, sickness in family. Good fishing and hunting. Price, \$1,800. Terms, \$500 down, balance on mortgage with yearly payments of \$500. Will sell cheaper for cash. Owner will rent with option to buy. Address John W. Hinkson, Childwold, N. Y.

TOWN OF RUSSELL

Population 1,842

*No. 729—Farm of 200 acres; 3 miles from Hermon P. O.; 3 miles from railway station at Hermon, on line of N. Y. C. R. R. Highways, good. Nearest large village, Hermon, population 600, 3 miles distant, reached by rail and highway. Surface, rolling. Soil, clay loam. Acres in meadow, 100; in timber, 15, maple; acres tillable, 150. Best adapted to timothy, clover, corn, small grain, etc. Fences, in good condition. House of 8 rooms, in good condition. Barns, in fair condition. Watered by well. Occupied by tenant. Reason for selling, owner wishes to realize money for business enterprise. Price, \$8,000. Address J. H. McLear, agent, Gouverneur, N. Y.

SARATOGA COUNTY

Area, 800 square miles. Population, 61,917. Annual precipitation, 35.41 inches. Annual mean temperature, 47° . Number of farms, 3,611. County seat, Ballston Spa.

This county is located in the eastern part of the state, bounded on the east by the Hudson River and on the south by the Mohawk River, and is intersected by the Sacandaga River in the northwestern portion. The northern part of the county is tillable in the Sacandaga Valley and along the Hudson River. Toward the center of the county the surface becomes less rugged and is adapted to pasturage and dairying, the soil being a sandy and gravelly loam. To the southwest most of the soil is slate and clay loam and to the southeast clay loam predominates. In the latter section there are quite a number of sand spots which are not fertile.

*Farm is in hands of agent or real estate dealer.

The surface is extensively covered with forests of ash, beech, elm, chestnut, hickory, oak and sugar maple. The county contains several lakes, Saratoga Lake and Jenny Lake being the largest. Some of the leading crops are corn, 482,561 bushels; oats, 435,812 bushels; buckwheat, 130,163 bushels; rye, 103,261 bushels; potatoes, 579,652 bushels; hay and forage, 75,421 tons. The value of all farm property is \$15,960,106. The average value of farm lands per acre is \$15.47 and of improved land, \$32.03; a slight gain over the values of 1900. The domestic animals number dairy cows, 16,224; horses, 8,115; swine, 10,612; sheep, 11,483; poultry, 178,318; production of milk was 7,203,456 gallons which with its products sold for \$726,945.

The county is intersected by the Champlain Canal, the D. & H. R. R. and the Fitchburg and Mt. McGregor railroads. The southeastern part of the county is traversed by electric lines from Saratoga to Schenectady, Albany, Troy, Mechanicville and Fort Edward. Most of the products of the county are demanded by the local markets of Saratoga Springs, Ballston Spa, etc. Saratoga Springs is one of the most fashionable summer resorts in the world. Here are more than twenty mineral springs, some of which are of great celebrity and are of recognized medicinal value. These springs are now owned by the state, being one of the results accomplished in the movement for the conservation of the natural resources of the state now being rapidly developed. The county contains 195 district schools, 74 miles of state and county roads, 1,011 miles of improved highways; and 18 agricultural organizations are aiding the individual farmers throughout the county.

TOWN OF CHARLTON

Population 1,030

*No. 730—Farm of 108 acres; 5 miles from Ballston Spa P. O. and railway station, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school; 5 miles from churches, butter factory and milk station. Highways, good. Surface of farm, half rolling and half level. Soil, black, good. Acres in meadow, 30; in natural pasture, 10; in timber, 8, hard wood and chestnut; acres tillable, 90. Fruit, old apple orchard, also 100 apple trees 5 years old, $\frac{3}{4}$ acre of strawberries. Best adapted to hay, fruit, grain and dairying. Fences, wire, good. House, 15 rooms, bath, toilet, fine condition. Outbuildings: large barn in fine condition; also two smaller barns in good condition. Water pumped by gasoline engine. Occupied by tenant. Reason for selling, owner has other business. Price, \$5,000. Will include considerable equipment for all cash sale. Terms, easy. Address Frank H. Knox, agent, 469 State St., Schenectady, N. Y.

*No. 731—Farm of 130 acres; 10 miles northwest of Schenectady, which is on the line of N. Y. C. and the D. & H. R. R.; $\frac{1}{2}$ mile to school; 1 mile to churches; stage carries milk to the city agents daily. Highways, good dirt roads. Near village of Charlton; 8 miles from Schenectady, population 80,000; 10 miles from Amsterdam, population 25,000; both reached by highways only.

Surface of farm, river flats and upland, nearly level. Soil, gravelly and sandy loam, free from stones. About 33 acres natural meadows; 15 acres timber with chestnut predominating; 82 acres tillable. Fruit, 125 thrifty apple trees, all bearing, and about 30 pear, plum and cherries; nice blackberries; strawberries and raspberries. Produces big hay and grain crops, and excellent potatoes. Fences, wire and board, in fair condition. House is painted and has 11 rooms, chestnut trimmings, 4 large barns, in fair condition; large sheds and cribs. Watered by springs, wells and cisterns; stream through the farm. Excellent farm in thrifty neighborhood. Occupied by tenant. Price, \$3,500. Terms, \$1,500 cash, balance on easy terms. Address Frank H. Knox, agent, 469 State Street, Schenectady, N. Y.

No. 732—Farm of 45 $\frac{1}{2}$ acres; in village of Charlton, population about 500, with 3 general stores, 2 churches, primary school and academy; 4 $\frac{1}{2}$ miles west of Ballston Lake P. O., R. D. 1, and same station, on line of the D. & H. R. R.; 8 miles north of Schenectady, on high elevation, commanding fine view of surrounding country; 8 miles from Ballston Spa, the county seat. Surface, very level. Soil, strong loam. About 2 acres of meadow; 20 acres of natural pasture; 7 acres of timber, large hemlock and hard wood. A few apple trees. Most of this farm is smooth and tillable. Can raise hay, oats, rye and buck-

*Farm is in hands of agent or real estate dealer.

wheat. Place can be vacated on sale. Large farm house, recently painted and in good repair, 14 rooms. Large hay barn, large stable, large carriagehouse, granary and chickenhouse. House has cistern and neverfailing well. Ballston Lake, Berkshires and Catskills and Mohawk Hills in sight. This is a fine place for a farmer to make a good living. The land will support 8 or 9 cows and horses; good place to raise stock. Ballston Lake, $4\frac{1}{2}$ miles east, is a station on the H. V. trolley line running from Albany to Schenectady and north to Saratoga and Lake George. From Ballston Lake it is a 40-minute trolley ride to Albany through Schenectady. The D. & H. R. R. also passes through Ballston Lake. Reason for selling, to close an estate. Price, \$3,000, the least it can be sold for. Owner has just spent about \$500 in repairs. At this price the land is practically given away, and the house itself, not to speak of the barns, could not be reproduced for the price asked for the whole. Terms, \$1,000 cash, balance on mortgage at buyer's option, up to 15 years or installments if desired. If buyer cannot pay \$1,000, \$650 would be taken on contract, balance payable as agreed. Address William L. Stone, 99 Nassau Street, New York City.

*No. 733—Farm of 30 acres; 3 miles from Elnora P. O. and railway station, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{2}$ miles from churches. Highways, good. Nearest large village, Mechanicville, population about 6,000, reached by highway, 6 miles distant. Surface of farm, level. Soil, heavy sand loam, good. Acres in meadow, 8; in timber, 7, second growth; acres tillable, 23. Fruit, 75 apple trees, pears and plums, all young and bearing. Best adapted to fruit, poultry and garden crops. Fences, wire, good. House, 7 rooms, good condition. Outbuildings: barn, 28x40; wagonhouse; cider mill; good condition. Watered by well. Occupied by tenant. Reason for selling, owner has other business. Price, \$2,300. For all cash will include considerable equipment. Terms, $\frac{1}{2}$ cash. Address Frank H. Knox, agent, 469 State Street, Schenectady, N. Y.

*No. 734—Farm of 90 acres, located 7 miles from Schenectady P. O. and railway station, on line of N. Y. C. & D. &

H. R. R.; 1 mile from school; $1\frac{1}{2}$ miles from churches. Highways in excellent condition. Surface of farm nearly level. Soil, gravel loam. Acres in natural pasture, 2; in timber, 8, oak, pine and chestnut, first and second growth. Acres tillable, 80. Fruit, 100 apple, 25 pear, 12 plum and 140 cherry trees, all in excellent bearing condition. Best adapted to hay, grain and dairying. Fences, good, wire. House, 12 rooms, excellent condition. Outbuildings, large barns, excellent condition. Watered, house and barns by well, fields by brook. Occupied by owner. Reason for selling, owner wishes to retire from business. Price, \$5,000. Terms, $\frac{1}{2}$ cash. Address Frank H. Knox, agent, 469 State St., Schenectady, N. Y.

TOWN OF CLIFTON PARK

Population 2,225

No. 735—Farm of 107 acres; $1\frac{1}{2}$ miles from Round Lake P. O. and railway station, on line of D. & H. R. R.; $1\frac{1}{2}$ miles from school and churches, Methodist and Episcopal; $1\frac{1}{2}$ miles from milk station. Highways, good. Nearest village, Ballston, population 5,000, 7 miles distant; 14 miles from Schenectady, reached by rail, trolley or highway. Surface, rolling. Altitude, 300 feet. Soil, clay-sand loam. Acres in meadow, 15; in natural pasture, 35; in timber, 25, young chestnut, except 1 acre of locust; acres tillable, 75. About 300 apple trees. Best adapted to fruit and berries. About $\frac{1}{2}$ acre each of strawberries, black raspberries, high blackberries and asparagus. Fences, wire, in good condition. House, 28x35, 8 rooms, good condition. Barn, 30x40, slate roof, wing, 16x20; henhouse, 13x26, slate roof, and one, 10x30 B. B. roof, both having concrete floors; hoghouse, stone icehouse, etc. Watered, house and barns, from city water; fields, by streams. Round Lake 1 mile distant. Market at Round Lake, $1\frac{1}{2}$ miles distant. Occupied by owner. Reason for selling, owner has too much land. Price, \$3,500. Terms, $\frac{1}{2}$ down. Owner will rent. Address A. E. Knight, Round Lake, N. Y.

TOWN OF CORINTH

Population 3,102

No. 736—Farm of 80 acres; 1 mile from Palmer P. O.; 3 miles from Corinth railway station, on line of D. & H.

*Farm is in hands of agent or real estate dealer.

R. R.; $\frac{1}{8}$ mile from school; 2 miles from churches. Saratoga Springs, population about 14,000, and Glens Falls, population about 15,000, 12 and 11 miles distant, reached by rail and highway. One mile from State road. Surface of farm, rolling and level. Altitude, about 650 feet. Soil, sandy loam and clay. Acres in meadow, 30; in natural pasture, 35; in timber, 15, pine, hemlock, hard wood; acres tillable, about 50. Fruit, 40 apple trees, cherries, strawberries and grapes. Young orchard of 50 trees. Sugar maple orchard of about 150 trees. Best adapted to potatoes, corn, gardening, etc. Fences, wire and rail, fair condition. House, 2 stories, good condition, main part, 22x32, kitchen and woodshed, 18x26. Outbuildings: barn, 30x40; barn, 28x30; barn, 28x32; good condition; 2 henhouses; hogpen, sugarhouse; well-house, new silo, and other outbuildings. Watered, house, by well and cistern; barns, by well and spring; fields, by running water. This farm is on telephone and R. D. line. Good home market. It is $\frac{3}{4}$ mile from Hudson River; 3 miles from Lake Boneta; 5 miles from several other lakes. Occupied by owner. The International pulp and paper mills are located near farm, so there is good market. Telephone in house. Reason for selling, poor health of owner. Price, \$4,000. Terms, \$2,500 cash, remainder on mortgage. Address Mrs. Wm. B. Storey, Corinth, N. Y., R. D. 1.

*No. 737—Farm of 330 acres, located 6 miles from Corinth P. O., R. D. 2, 5 miles from railway station at Corinth, on line of D. & H. R. R.; $1\frac{1}{2}$ miles from school; 1 mile from Methodist church. Highways, somewhat hilly but good. Surface of farm rolling. Altitude 1,170 ft. Soil, glacial drift loam. Acres in meadow, 25; in natural pasture, 45; in timber, 260, pine, poplar, spruce and hard wood. Acres tillable, 30. Fruit, old orchard of 40 apple trees, young orchard of apples, plums, cherries, pears and quinces, 900 trees. Best adapted to hay, potatoes and fruit. Fences in good condition. House, 7 rooms, new roof, recently painted inside. Outbuildings, horse barn, 26x30, good condition; cow barn, 30x40, fair condition. Watered by well, springs and lake. Farm borders on Efner Lake, good fishing, fine shore line, good camping sites, excellent hunting. Reason for selling, owner has

other business. Occupied by owner as summer home. Price, \$3,300. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address Abram M. Hollister, Corinth, N. Y.

No. 738—Farm of 50 acres, located 6 miles from Corinth P. O., R. D. 2 and railway station, on line of D. & H. R. R.; 1 mile from school; $\frac{1}{2}$ mile from Methodist church. Highways, good. Surface of farm, gentle slope to south. Altitude 1,170 feet. Soil, fertile, has always been dairy farm. Acres in meadow, 20; in natural pasture, 30; in timber, 25, pine. Acres tillable, 20. Fruit, 20 apple trees. Best adapted to fruit, corn, beans, etc. Fences in good condition. House, 8 rooms, fair condition. Outbuildings, horse barn, 26x28, good condition; cow barn, 30x36, good condition. Watered, house and barn by well, fields by spring and lake. This farm is on Efner's Lake, 50 rods of shore, good camping sites. Occupied by tenant. Price, \$1,200. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address Abram M. Hollister, Corinth, N. Y.

TOWN OF DAY

Population 628

No. 739—Farm of 210 acres, located 3 miles from West Day P. O., 10 miles from railway station at Northville, on line of F. J. & G. R. R.; 1 mile from school; 2 miles from Methodist church. Highways rough. Nearest city, Gloversville. Surface of farm rough. Altitude 1,000 feet. Soil, loam. Acres in meadow, 35; in natural pasture, 50; in timber, 150, young pine and maple. Best adapted to potatoes and buckwheat. Fences, rail and wire. House, $1\frac{1}{2}$ stories. New barn. Watered by well and brook. Occupied by owner. For price and terms address L. E. Holcombe, West Day, N. Y.

No. 740—Farm of 80 acres, located $\frac{1}{4}$ mile from West Day P. O., 10 miles from railway station at Northville, on line of F. J. & G. R. R.; short distance from school; $\frac{1}{4}$ mile from Christian church. Highways good. Nearest city Gloversville, 25 miles distant. Surface of farm, part hilly and part level. Altitude 750 feet. Soil, loam. Acres in meadow, 25; in natural pasture, 25; in timber, 30, hemlock and maple. Acres tillable, 40. Best adapted to oats, corn and potatoes. Fences, stone wall and

*Farm is in hands of agent or real estate dealer.

wire, good condition. House, $1\frac{1}{2}$ stories, good condition. Outbuildings, horse barn and cow stable, fair condition. Watered, house and barn by brook, fields by springs. Occupied by owner. Reason for selling, advanced age of owner. Price, \$1,600. Terms, part down, balance on time. Address P. L. Colsan, West Day, N. Y.

*No. 741—Farm of 140 acres, located 20 miles from Gloversville P. O., 8 miles from railway station, on line of F. J. & G. Ry., $\frac{1}{4}$ mile from school, 2 miles from churches. Highways, old stage road. Surface of farm hilly and stony. Acres in meadows, 20; in natural pasture, 40; in timber, 70. Fruit, 500 apple, 2 pear, 1 peach and 5 cherry trees, a few currant bushes. House, $1\frac{1}{2}$ stories, good, 7 rooms. Outbuildings, barn, 30x40, horse barn, 16x26, open shed, 30x40. Watered by two wells and spring. Price, \$600. Address H. L. Reed, agent, Amsterdam, N. Y.

TOWN OF GALWAY

Population 1,205

No. 742—Farm of 100 acres; $\frac{1}{2}$ mile from school; 2 miles from Methodist and Baptist churches; 3 miles from Catholic church; R. D. 1 from Ballston Spa. Highways, nearly level, some hills. Nearest large village, Saratoga Springs, 13 miles distant, reached by highway, 6 miles from trolley. Occupied by owner. Surface, level. Soil, clay loam. Acres in meadow, 30; natural pasture, 20; timber, 15, chestnut, oak and birch; acres tillable, 50. Fruit, apples, pears, plums, cherries, grapes, etc. Best adapted to grain, hay or farm truck. Fences, wire, board and rail, good condition. House, 14 rooms, 3 fireplaces. Outbuildings: horse barn, 26x30; hay barn, 30x40; hoghouse; henhouse; woodshed; cornhouse. Watered by well, cistern and brook. Reason for selling, advanced age of owner. Price, \$2,000. Address C. G. Albertson, Galway, N. Y., R. D. 1, Box 44.

*No. 743—Farm of 100 acres, located 9 miles from Amsterdam P. O. and railway station, $1\frac{1}{2}$ miles from school and church. Soil, black loam. Acres in timber, 15, maple, elm and oak. Acres tillable, 85. Fruit, 40 apple, 23 pear, 12 plum and 12 cherry trees, also some grapes and currants. Fences, in good

condition. House, $1\frac{1}{2}$ stories, 13 rooms, good. Outbuildings: barn, 40x50; horse barn, 26x45; new corn house; new hen house; new mill, 24x50 and new hog pen. Watered by well and spring. Price, \$4,200. Terms, $\frac{1}{2}$ cash, balance on easy terms. Address H. L. Reed, agent, Amsterdam, N. Y.

TOWN OF GREENFIELD

Population 1,552

No. 744—Farm of 200 acres, located 6 miles from Saratoga Springs, 1 mile from railway station at King's Station, on line of Hudson Valley Ry., $\frac{3}{4}$ mile from school, $2\frac{1}{2}$ miles from Protestant churches, $3\frac{1}{2}$ miles from butter factory and milk station. Highways, good country roads. Surface of farm, mostly rolling, some rough land. Altitude about 800 ft. Soil, heavy loam. Acres in meadow, 55; in natural pasture, 75; in timber, 75, pine, hemlock, chestnut and hardwood. Acres tillable, 60. Fruit, about 60 apple trees. Best adapted to fruit, hay, cattle raising, etc. Fences, stone walls, need repairs. House, 24x40, 2 stories, slate roof, fair condition. Outbuildings: large barn, 60x30; smaller barn, carriage house and shop. Watered, house by well and cistern, barn by well, fields by streams. Price, \$2,500. Terms, $\frac{1}{2}$ cash, balance on bond and mortgage. Address James W. Houghton, Saratoga Springs, N. Y.

No. 745—Farm of 110 acres; $2\frac{1}{2}$ miles from South Corinth P. O., Porter Corners R. D. 1; 3 miles from station, on line of the Adirondack R. R.; $\frac{1}{4}$ mile from school; $2\frac{1}{2}$ miles from Protestant church; 3 miles to creamery. Roads in vicinity, fairly good; 2 miles to State road leading from Saratoga to Corinth. Nearest village, Saratoga Springs, 10 miles distant, reached by rail and highway. Occupied by owner. Surface, about $\frac{1}{2}$ hilly, remainder level. Soil, gravelly loam. Acres in meadow, 35; natural pasture, 50; timber, 25, second growth hemlock, spruce and hard wood; acres tillable, 70. Fruit, about 50 apple trees, several trees of pears, plums and cherries, $\frac{1}{2}$ acre in strawberries and $\frac{1}{4}$ acre in raspberries. Best adapted to corn, potatoes, oats, buckwheat and fruits. Fences, stone, board, rail and wire, in good condition. House, 10 rooms, in first-class condition. Barns, 3 large barns, in first-class condition,

*Farm is in hands of agent or real estate dealer.

Watered, house, and barns, by living springs piped to buildings; fields, by springs and streams. This farm lies in the foothills of the Adirondack Mountains, Mooleville Lake, about 2 miles distant. It is a very pleasant place, suitable for stock raising, especially sheep. A fine market for everything at Saratoga Springs. Reason for selling, death of owner's husband. Price, \$3,000. Terms, \$1,500 cash, mortgage to secure balance. Address Mrs. Frances A. Dickens, Porter Corners, N. Y., R. D. 1.

No. 746—Farm of 50 acres; $1\frac{1}{2}$ miles from Middle Grove P. O., R. D. 2, Greenfield Center; $1\frac{1}{2}$ miles from railway station at Middle Grove on line of Eastern New York R. R.; $\frac{1}{2}$ mile from school and churches; 4 miles from butter factory; $1\frac{1}{2}$ miles from milk station. Highways, good. Nearest city, Saratoga, population 14,000, 8 miles distant, reached by highway, rail and trolley. Surface, level, some rolling. Soil, clay loam. Acres in meadow, 25; in timber, 2, second growth pine, chestnut; acres tillable, 47. Fruit, 500 apple trees, 10 pear, 6 cherries; also currants, grapes, raspberries and strawberries. Best adapted to corn, oats, rye, buckwheat and potatoes. Fences, woven wire, barbed wire, board and some stone wall. House, 12 rooms, good condition. Large barn with basement, in good condition; carriage house; pighouse; 2 hen-houses. Watered by well and spring, running water in stable and barnyard. Occupied by owner. Good location; present owner has summer boarders. Reason for selling, old age of owner. Price, \$2,500. Terms, cash, or a reasonable amount down. Address Mrs. J. H. Stedman, Greenfield Center, R. D. 2.

No. 747—Farm of 100 acres; $1\frac{1}{2}$ miles from Middle Grove P. O., R. D. 2; $1\frac{1}{2}$ miles from railway station at Middle Grove, on line of E. N. Y. R. R.; $\frac{1}{4}$ mile from school; $1\frac{1}{2}$ miles from churches and milk station; $3\frac{1}{2}$ miles from butter factory. Highways, somewhat hilly but good. Nearest large village, Saratoga Springs, population 14,000, $8\frac{1}{2}$ miles distant, reached by rail and highway. Surface, rolling and level. Acres in meadow, 30; in natural pasture, 45; in timber, 25, pine, hemlock, chestnut, hard wood; acres tillable, 75. Fruit, 20 apple trees, 4 plum and 4 cherry trees. Best adapted to corn, oats,

buckwheat and vegetables. Fences, stone, rail, fair condition. House, 2 stories, 22x32, 2 wings, 13x18. Outbuildings: barn, 26x47; cow stable, 13x24; wagonhouse; granary, 18x40; wagonhouse, 18x24; toolhouse, 13x20; poultryhouse; hoghouse. Watered by well, spring and creek. Lake Desolation, a summer resort, is about 2 miles from farm. Reason for selling, poor health of owner. Price, \$3,000. Address Samuel Kilmer, Greenfield Center, N. Y., R. D. 2.

No. 748—Farm of 52 acres; $1\frac{1}{2}$ miles from Greenfield Center P. O., R. D. 1; 4 miles from railway station; $1\frac{1}{2}$ miles from churches. Highways, half State road, half good country road. Nearest large village, Saratoga Springs, 4 miles distant, reached by highway. Occupied by owner. Surface of farm, level and rolling. Heavy soil. Acres in meadow, 10; in natural pasture, 12; in timber, 8, hemlock, hard wood; acres tillable, 32. About 10 fruit trees, strawberries and raspberries. Best adapted to corn, oats, potatoes, buckwheat, garden truck, berries, rye, onions, etc. Fences, part stone wall, part wire, fair condition. House, 15 rooms. Outbuildings: barn, 30x40; shed, 18x24; henhouse, 8x16; \$100 will put buildings in good condition. Watered by well and brook. Brook crosses farm. This farm is about 8 miles from Saratoga Lake. Reason for selling, poor health of owner. Price, \$1,800. Terms, \$1,000 down, remainder on mortgage. Address C. A. Record, Greenfield Center, N. Y.

TOWN OF HADLEY

Population 672

No. 749—Farm of 270 acres; 8 miles from Hadley station; $2\frac{1}{2}$ miles from Conklingville P. O. 130 acres woodland. Watered by springs and brook. Fences, very good. 2-story house, 26x32, in good condition. 2 barns, 40x40 each, good condition. Price, \$1,000. Terms, \$500 cash, balance on time. Owner will rent with option to buy. Address Jos. George, Conklingville, N. Y.

No. 750—Farm of 76 acres; 3 miles from Hadley P. O. and railway station, on line of D. & H. R. R.; $\frac{1}{8}$ mile from school; 3 miles from churches. Highways, somewhat hilly but good. Surface of farm, hilly and rather rough. Soil, sandy loam. Acres in meadow, 20; in natural pasture, 20; in timber, 35,

maple, birch, beech, pine, hemlock, etc.; acres tillable, 25. Fruit, about 50 apple trees. Best adapted to potatoes, corn, buckwheat, beans, etc. There is a sugar bush of about 300 trees. Fences, wire and rail. House, 28x34, nearly new. Outbuildings: shed, 25x50; barn, 30x40, fair condition. Watered, house, by well; barn, by well and creek; fields, by spring. Reason for selling, owner has other business. Price, \$1,800. Terms, \$800 cash, balance on easy terms. Address F. J. Dunn, Hadley, N. Y.

No. 751—Farm of 123 acres, located 5 miles from Hadley P. O., 2 miles from railway station at Wolf Creek, on line of D. & H. Ry., $\frac{3}{4}$ mile from school, 5 miles from churches. Highways, somewhat hilly but good. Nearest large village, Luzerne, 5 miles distant, reached by highway. Surface of farm rolling. Soil, sandy loam. Acres in meadow, 65; in natural pasture, 33; in timber, 25, maple, beech, poplar and pine. Acres tillable, 65. Fruit, pears, cherries, apples, plum, $\frac{1}{2}$ acre of strawberries and 12 currant bushes. Best adapted to potatoes, buckwheat and corn. Fences, pole and wire, fair condition. House, 26x32, kitchen and woodshed 20x30, fair condition. Outbuildings: horse barn and wagon house, 20x60, hay barn and cow stable, 30x40, fair condition. Watered, house and barn by water piped from creek. Occupied by tenant. Price, \$1,000. Terms, \$200 down. Address Wilbur T. Dayton, Palmer Falls, N. Y.

No. 752—Farm of 200 acres, located 4 miles from Hadley P. O., $\frac{1}{2}$ mile from railway station, on line of D. & H. Ry., $\frac{1}{4}$ mile from school, 1 mile from milk station. Highways, good condition. Nearest city, Glens Falls, 12 miles distant, population about 10,000, reached by rail and highway. Surface of farm rolling. Altitude 900 ft. Soil, sandy loam. Acres in meadow, 75; in natural pasture, 25; in timber, 100; pine, hemlock, hardwood. Fruit, some apples. Best adapted to potatoes, corn, oats and hay. Fences, wire, good condition. House, 26x20; good condition. Outbuildings in good condition. Watered, house by well, barns by spring, fields by creek and pond. Occupied by owner. Reason for selling, ill health of owner. Price, \$3,000. Terms cash. Address J. H. Dority, Hadley, N. Y.

TOWN OF MALTA

Population 1,285

No. 753—Farm of 64 acres; $1\frac{1}{4}$ miles from Jonesville and Round Lake; $1\frac{1}{4}$ miles from railway station at Round Lake, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{4}$ miles from churches, Methodist and Episcopal; 6 miles from butter factory; $1\frac{1}{4}$ miles from milk station. Highways, good. Nearest village, Ballston, 5,000 population, 6 miles distant, reached by highway and trolley; Schenectady, population 80,000, 13 miles distant, reached by rail. Surface of farm, level. Altitude, 300 feet. Acres in meadow, 13; in natural pasture, 5; acres tillable, 44. 20 apple, 6 pear and 6 plum trees. 10-room house, $\frac{1}{2}$ slate and $\frac{1}{2}$ shingle roof, good condition. Barn, 30x40; carriagehouse, 28x38, slate roof; shed, 16x50; hoghouse, 13x13; all in good condition. Watered, house, by well; barns, by spring; fields, by brooks. $1\frac{1}{2}$ miles from Round Lake. This farm can be used as a truck and berry farm, market at Round Lake. Occupied by tenant. Reason for selling, owner has more land than he wants. Price, \$2,000. Terms, $\frac{1}{2}$ cash. Address Mrs. A. E. Knight, Round Lake, N. Y.

*No. 754—Farm of 64 acres; $1\frac{1}{4}$ miles from Round Lake P. O. and railway station, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{4}$ miles from church; 4 miles from butter factory, milk station and cold storage. Highways, good. Surface of farm, $\frac{1}{2}$ level and $\frac{1}{2}$ rolling. Soil, clay and sand loam. Acres in meadow, 20; acres tillable, 45. Fruit, apples, plums and cherries, small orchard but good. Best adapted to hay, grain, dairying and fruit. Fences, in poor condition. House, 9 rooms, slate roof, fair condition. Outbuildings: grain barn, 30x40; carriagehouse, 29x35; shed, 16x50; fair condition. Watered by well and brook. Occupied by tenant. This farm is well located for selling garden truck and fruit. Reason for selling, owner has another farm. Price, \$2,000. Terms, $\frac{1}{2}$ cash. Address Frank H. Knox, agent, 469 State Street, Schenectady, N. Y.

TOWN OF MILTON

Population 5,724

*No. 755—Farm of 50 acres; 1 mile from Rock City Falls P. O.; $\frac{1}{8}$ mile from trolley, on line of E. N. Y. R. R.; $\frac{1}{2}$

*Farm is in hands of agent or real estate dealer.



FIG. 17.— HOUSE ON FARM 747, TOWN OF GREENFIELD, SARATOGA COUNTY.

mile from school; 5 miles from butter factory and apple storage. Highways, good. Nearest large village, Ballston Spa, population 5,000, 5 miles distant, reached by trolley and highway. Soil, excellent creek loam and gravel. Acres in meadow, 10; in natural pasture, 10; in timber, 5, second growth; acres tillable, 30. Best adapted to potatoes, buckwheat and hay. Fences, wire, fair condition. House, 6 rooms, poor condition. Watered by well and stream. Splendid trout brook runs through farm. This farm is 7 miles from Saratoga Springs which makes a good market. Occupied by tenant. Reason for selling, owner has too much land. Price, \$1,200. Terms, \$500 cash. Address Frank H. Knox, agent, 469 State Street, Schenectady, N. Y.

*No. 756—Farm of 50 acres, located 5 miles from Ballston Spa P. O. and railway station, on line of D. & H. Ry., $\frac{1}{8}$ mile from school and Protestant and Catholic churches. Highways in good condition. Surface of farm, easy slopes. Soil, rich, red, loam. All tillable. Best adapted to hay, grain, dairy or poultry. Fences, stone and wire, good. House, large, modern, 15 rooms, good condition. Outbuildings: large barns, wagon-house, sheds, tool house, ice and henhouse, good condition. Watered, house by well and cistern, barns by well, fields by brook. Occupied by owner. Price, \$3,000. Terms, $\frac{1}{2}$ cash. Address Frank H. Knox, agent, 469 State Street, Schenectady, N. Y.

*No. 757—Farm of 23 acres, located 15 miles from Amsterdam P. O. and railway station, on line of N. Y. C. Ry. Surface of farm, nearly level. Acres in timber 2, pine, birch and maple. Fruit, 10 apple, 1 pear, 18 plum, 1 cherry and 1 peach trees, also grapes, currants, red raspberries, blackberries and strawberries. Fences, good. House, new double bungalow. Outbuildings, shed, poultry house, barn and stalls, 24x34. Watered by well and cistern. Occupied by owner. Price, \$3,200. Terms, \$2,500 cash, balance on mortgage. Address H. L. Reed, agent, Amsterdam, N. Y.

TOWN OF MOREAU

Population 3,340

No. 758—Farm of 130 acres, located $1\frac{1}{2}$ miles from city of Glens Falls, 1 mile from P. O. and railroad station,

on line of D. & H. Ry., $\frac{1}{4}$ mile from school, 1 mile from seven churches. Highways, good. Occupied by tenant. Surface level. Soil, sandy. Best adapted to corn, rye and truck gardening. Fences in poor condition. House, 40x50, 2 stories. Outbuildings: barn, 30x40, barn, 20x24, good condition. Watered, house by well, barns by never-failing brook. This farm is within 2 miles of 30,000 population and would be most profitable for poultry raising and garden truck. Price, \$50 per acre. Terms, $\frac{1}{3}$ down, balance on mortgage at 5%. If interested write for picture of buildings. Address D. S. Griffin, Hudson Falls, N. Y.

No. 759—Farm of 80 acres, located 2 miles from Glens Falls P. O., 1 mile from railway station at Hudson Falls, on line of D. & H. Ry., $\frac{1}{4}$ mile from school, $\frac{1}{2}$ mile from churches, $2\frac{1}{2}$ miles from butter factory, $\frac{1}{2}$ mile from milk station. Highways, good. Nearest city, Glens Falls, 2 miles distant, reached by highway and trolley. Soil, good, part sand loam and part heavier. Acres in timber, 20, chestnut, oak, pine and birch. Acres tillable, 60. Fruit, apples, pears and grapes. Best adapted to corn, rye, oats, potatoes, etc. Fences in poor condition. House, 15 rooms, 10 closets, needs repairs. Outbuildings, large but in need of repairs. Watered by wells, cisterns and brooks. Unoccupied. For price and terms address W. A. Burhans, 14 Marion Ave., Glens Falls, N. Y.

TOWN OF SARATOGA

Population 3,942

No. 760—Farm of 121 acres; 3 miles from Wayville P. O., R. D. 1; $\frac{3}{4}$ mile from railway station at Cedar Bluff, on line of B. & M. R. R.; 1 mile from school; 2 miles from church; 6 miles from butter factory; $\frac{3}{4}$ mile from condensing plant. Highways, level and smooth. Nearest city, Saratoga Springs, population 14,000, $5\frac{1}{2}$ miles distant, reached by rail and highway. Surface, level, no stone. Soil, good, heavy sand loam. Acres in meadow, 60; in natural pasture, 30; in timber, 15, oak, chestnut and pine; acres tillable, 100. Fruit, pears, plums, cherries, peaches and 5 acres of choice apples. Best adapted to potatoes, corn, oats, rye, wheat and barley. Fences, American wire and rail, good condition. House, 2 stories, 14

*Farm is in hands of agent or real estate dealer.

rooms, in good condition. Large hay barn, horse barn, wagonhouse, pighouse and cornhouse, all in good condition. Watered by well and spring. $\frac{3}{4}$ mile from Saratoga Lake. Occupied by owner. Reason for selling, poor health of owner. Price, \$6,000. Terms, \$4,000 down, balance on mortgage. Owner will sell stock and tools if any one desires, at a reasonable price. Address David P. Robbins, Wayville, N. Y., R. D. 1.

*No. 761—Farm of 113 acres; 7 miles from Saratoga Springs P. O., R. D. 1; 2 miles from railway station at Cedar Bluff, on line of B. & M. R. R.; $\frac{1}{2}$ mile from school; 2 miles from churches and milk station; 4 miles from butter factory. Highways, good. Surface of farm, slopes a little south, well drained. Soil, clay and sand loam. Acres in meadow, 60; in timber, 13, variety; acres tillable, 100. Fruit, 70 apple, 11 pear, 16 cherry trees and some grapes. Best adapted to hay, grain, fruit, etc. Fences, wire, board and rail, good condition. House, 2 stories, brick, 8 large rooms and hall, 4 small rooms; telephone in house. Outbuildings: 2 large basement barns; wagonhouse; henhouse; new iron roof on one barn last year; others painted, fair condition. Watered by well, spring and brook. Saratoga Lake, 2 miles from farm; Hudson River, 4 miles; and Adirondack Mountains, 12 miles. Occupied by tenant. Reason for selling to close an estate. Price, \$6,500. Terms, \$3,500 down, remainder on first mortgage, if desired. Address O. V. Howland, agent, Saratoga Springs, N. Y.

*No. 762—Farm of 113 acres, located 7 miles from Saratoga Springs P. O., R. D. 1, 2 miles from railway station at Cedar Bluff, on line of Boston & Maine Ry., $\frac{1}{2}$ mile from school, 2 miles from church, 4 miles from butter factory, 2 miles from milk station. Highways, good, some hills. Surface of farm rolling. Soil, strong clay and sand loam. Acres in meadow, about 50; in natural pasture 20, in timber 13, white pine, oak, etc. Acres tillable, 100. Fruit, apples, plums, pears, grapes, cherries and small fruits. Best adapted to hay, grain, etc. Fences, wire and rail, fair condition. House, 2 stories and attic, brick, 8 large rooms and 4 small rooms, large cellar, cement floor, fair condition. Out-

buildings: two large basement barns, wagon house, poultry house, fair condition. Watered by well and brook. Occupied by one of the owners. Reason for selling, to close an estate. Price, \$6,800. Terms, \$4,800 down, balance on mortgage. Address O. V. Howland, agent, Saratoga Springs, N. Y.

No. 763—Farm of 167 acres, located $\frac{1}{2}$ mile from railway station at Burgoyne, on line of Boston & Maine Ry., $\frac{1}{4}$ mile from school, 6 miles from churches of all denominations and milk station, $2\frac{1}{2}$ miles from butter factory, 7 miles from milk condensing plant. Highways, State road. R. F. D. to farm. Nearest large village, Saratoga Springs, 6 miles distant, reached by rail and highway. Surface of farm rolling. Soil, clay loam, sand loam and gravel loam. Acres in meadow, 40; in natural pasture, 22; in timber, 9, pine and chestnut. Acres tillable, 100. Fruit, 45 apple trees, 6 cherry trees and 10 plum trees, also small strawberry patch. Best adapted to dairying or general farming. Fences, barbed wire and rail, fair condition. House, $2\frac{1}{2}$ stories, 2 family, 18 rooms, good condition. Outbuildings: 2 barns, one 30x52 and one 20x40, shed, carriagehouse, henhouse, icehouse, smokehouse, all in good condition except one barn and shed. Watered, house by spring, barn by drilled well, fields by creek. Occupied by owner and tenant. Reason for selling, ill health of owner. Price, \$10,000. Terms, $\frac{1}{2}$ cash, balance on bond and mortgage. 15 acres of moulding sand on farm. Address Chauncey A. Wooley, Saratoga Springs, N. Y., R. D. 1.

TOWN OF SARATOGA SPRINGS

Population 13,710

No. 764—Farm of 40 acres; $\frac{1}{2}$ mile from Saratoga Springs, $\frac{3}{4}$ mile from railway station at Saratoga Springs, on line of D. & H. R. R. and B. & M. R. R.; $\frac{3}{4}$ mile from school and churches of all denominations. Highways, State road. Surface of farm, level. Soil, sandy loam. Acres in meadow, 2; acres tillable, 38. Best adapted to truck gardening. No fences. House, 10 rooms, steam heated, baths and toilets, excellent condition. Outbuildings: large barn; carriagehouse; greenhouse plant, etc. Watered by city water. This place has

*Farm is in hands of agent or real estate dealer.

been conducted as a hothouse and gardening plant for many years. There are 8 hothouses, averaging 100 feet in length, with a width of about 18 feet, double side benches with large center porch. Houses are heated with hot water boilers, latest designs, new ones having been installed during the last 2 years. Everything modern and in first-class condition. In connection with these hothouses, are 2 large, well constructed boiler houses, with complete outfit and general storage space. Over one of the boiler houses is a 3-room apartment finished off which may be used for help. These houses have been used for growing rhubarb, radishes and lettuce for early market and later in season for cucumbers. About 12 good-sized hot beds, with sash to cover. About 5 acres in asparagus beds; 20 acres in rhubarb used for forcing in hothouses in winter. This business has been running for about 20 years and a market has been established in New York, Albany, Troy, Schenectady and locally which uses all of the products at a good price. Occupied by owner. Reason for selling, death of former owner. Price, \$12,000. Terms, $\frac{1}{2}$ cash, first mortgage on balance. Address Etta C. Wells, 184 Church Street, Saratoga Springs, N. Y.

No. 765—Farm of 18 acres; 2 miles from Saratoga Springs P. O., R. D. 7; 2 miles from railroad station at Saratoga Springs, on line of the B. & M. R. R.; 1 mile from school; 2 miles from churches; 2 miles from cheese factory; 4 miles from condensing plant. Good State roads. Nearest city, Saratoga Springs, population about 14,000, distant 2 miles by highway. Surface, part hilly and part level. Soil on level portion, loam. 8 acres of meadow; 2 acres of natural pasture; 5 acres of timber, young birches and others; 11 acres are tillable. 2 cherry trees, 1 apple tree and 30 currant bushes. Can raise celery, corn, potatoes or any kind of crop. Fences, wire, not so very good. House, 8 rooms, good condition, with woodshed. Barn, 30x20; wagon shed, 10x20; hoghouse; underground cow stable. House has pump and spring; barns have pump; fields have running water. Saratoga Lake is two miles from farm. Occupied by owner. Reason for selling, owner has village property. Price, \$1,500. Terms,

\$600 down, balance to suit purchaser. Address Nellie E. Driscoll, 2 Pleasant Street, Saratoga Springs, N. Y. Owner will rent.

TOWN OF STILLWATER

Population 5,955

No. 766—Farm of 106 acres; $2\frac{1}{2}$ miles from post office and railway station; 1 mile from school; $2\frac{1}{2}$ miles from church; R. D. Nearest large village, Stillwater, population about 1,800, 5 miles distant, reached by highway. Occupied by owner. $\frac{1}{2}$ mile from State road that leads to New York City. Surface, rolling. Some timber. Fruit, 90 apple trees, 50 cherry trees, plums, peaches, pears and small fruits. Fences, in good condition. Large hay and cow barn; wagon and horse barn, 47x26, just slated; hoghouse and granary, 26x18, just slated. House, 12 rooms, slate roof, hardwood finish in kitchen. Cistern and well water in house; water tank of concrete at barn; 2 concrete tubs in pastures with running water. Adapted to general farming; 15 acres of black dirt are especially good for gardening. Good farm for fruit or poultry; 2 henhouses, 1, 10x15, 1, 30x25. Price, \$75 per acre. Address Miss E. Thompson or Miss J. Thompson, Stillwater, N. Y., R. D.

TOWN OF WILTON

Population 908

*No. 767—Farm of 250 acres, located 4 miles from Saratoga Springs P. O., $1\frac{1}{2}$ miles from trolley on line of H. V. Ry., church and school near farm. State road. Surface mostly level. Soil, sandy loam. Acres tillable, 100. Adapted to dairying, potatoes, poultry and small fruit. Fences, poor. House, 12 rooms, good condition. Outbuildings, barn, 40x60 with shed attached; barn, 26x35, stable room for 18 cows and 5 horses, good condition. Watered, house and barns by running water, fields by stream. This farm is near the foothills of the Adirondack Mountains. There is a small mill power trout stream and pond on this place. Saratoga Springs is good market for all poultry, milk and small fruits that can be purchased. Reason for selling, owner has too much property. Price, \$2,500. Terms, \$1,000 cash. Address Frank H. Knox, agent, 469 State Street, Schenectady, N. Y.

*Farm is in hands of agent or real estate dealer.

MISCELLANEOUS

No. 768—Farm of 177 acres; 11 miles from Amsterdam; $3\frac{1}{2}$ miles from West Galway; practically on the line of the proposed trolley line connecting Haganman with Rock City Falls, which will surely come though possibly not within a year or two. 25 acres of tillable land, which would be enough to take care of the place; 81 acres in woods, 5 acres of which is a fine pine grove. The lake covers 65 acres, fed by trout streams, and there is fine fishing. The soil is a

sandy loam, making it a most desirable spot for a sanitarium or club house. There is a new house of 10 rooms and the attic could be finished off for 2 or 3 more rooms; porch, 10x80. A 2-story camp in the pine grove; 2 cottages in pine grove, 12x20 each. Barn, 28x40; barn, 17x35; wagonhouse, 20x26; granary, 12x20; icehouse, 12x12; hoghouse, 12x14; another building, 22x50, that could be made into a camp. There are 6 boats included with the property. Price, \$5,100. Address A. A. Butterfield, owner, Haganman, N. Y., R. D. 2.

SCHENECTADY COUNTY

Area, 200 square miles. Population, 88,235. Annual precipitation, 35.41 inches. Annual mean temperature, 46.8°. Number of farms, 1,027. County seat, Schenectady.

This county is located in the eastern part of the state intersected by the Mohawk River.

The surface in the western part of the county is uneven and hilly, the hills being small and abrupt with many ravines. This section is suitable for pasturage chiefly. In the southern and western parts and along the Mohawk Valley the soil is black slate and clay loam which is fertile and very productive. The value of all farm property is \$7,217,178, which is an increase of 29.1 per cent. over the census of 1900. The principal crops reported were: corn, 109,694 bushels; oats, 247,945 bushels; buckwheat, 102,165 bushels; rye, 40,259 bushels; potatoes, 87,140 bushels; hay and forage, 33,346 tons. The average price of improved farm lands including buildings is \$55.48 per acre. The average value per acre of farm land only is \$31.10; an increase of nearly \$10 per acre since 1900. Domestic animals are found to be dairy cows, 4,929; horses, 3,162; swine, 2,952; sheep, 3,501; poultry, 62,771. The number of farms reporting dairy cows are 864, producing 2,459,571 gallons of milk, which sold for \$233,271. There are no creameries or cheese factories in the county, as most of the milk is sold in Schenectady and the different villages. The county is crossed by the Erie canal (barge), N. Y. C. & H. R. R., West Shore and D. & H. railroads and by numerous trolley lines leading to Amsterdam, Albany, Troy, etc. Schenectady with a population of 72,826 is known largely as being the seat of Union University, founded in 1795. Here also is located the American Locomotive Works, the second largest plant of its kind in the country. The enormous plant of the General Electric Company employing some 17,000 workmen is also in that city. These two large industrial plants in common with others scattered through the state are largely responsible for the great numbers of farm boys that have quit the farm to work in these industries. There are 51 schools in the county and it has only 28 miles of highway which is not improved. Its agricultural organizations consist of an agricultural club, 3 granges, and poultry, pigeon and pet stock associations.

TOWN OF DUANESBURG

Population 2,211

No. 769—Farm of about 90 acres; at Braman's Corners; 5 miles from Delanson railway station, on line of D. & H. R. R.; 4 miles from Esperance; 27 miles from Albany; 15 miles from Schenectady; 10 miles from Amsterdam; $\frac{1}{2}$ mile from church, school and store; R. D. New York morning papers reach the farm at 1 o'clock in the afternoon of

the day they are published. 10 acres of timber, balance in meadow and pasture land. Best adapted to corn, rye, oats, buckwheat, potatoes, vegetables and small fruit. Good apple orchard. Comfortable, old-fashioned farm house, in good condition, 2 stories, 7 rooms and large kitchen with sink and pump from never-failing well; stone cellar; woodshed extension. Spring near house and well in barnyard. Outbuildings: barn, 22x72; henhouse and woodshed. Fences,

stone and wire. Would make a good dairy or bee farm. Price, \$3,500. Terms to responsible party will be made very easy with but a small payment down as the owner is anxious to have the farm go into good hands. Address F. C. Sauter, 391 Sixth Street, Brooklyn, N. Y.

TOWN OF PRINCETOWN

Population 684

*No. 770—Farm of 150 acres; 13 miles from Schenectady P. O.; 4 miles from railway station at Hoffman's, on line of W. S. R. R., $\frac{1}{2}$ mile from school; 1 mile from churches. Highways, 1 mile from State road which leads to Schenectady. Nearest cities: Schenectady, 13 miles

distant, reached by highway, population about 80,000; Amsterdam, 8 miles distant, population about 25,000. Surface of farm, rolling. Soil, clay loam, excellent. Acres in timber, 25; acres tillable, 125. Fruit, 2 acres of apples, a few pears, trees about 20 years old. Best adapted to hay, grain and dairying. Fences, fair, stone, rail and wire. House, 8 rooms, good condition. Outbuildings: barn, 56x30; cow barn, 20x30; horse barn, 20x24; two sheep barns, 20x30 each; shed, 16x20, good condition. Watered by well and pond. Occupied by tenant. Reason for selling, owner living elsewhere. Price, \$3,500. Terms, $\frac{1}{2}$ cash, will exchange for city property. Address Frank H. Knox, agent, 469 State Street, Schenectady, N. Y.

SCHOHARIE COUNTY

Area, 647 square miles. Population, 23,855. Annual precipitation, 39 inches. Annual mean temperature, 48°. Number of farms, 3,288. County seat, Schoharie.

This county is located in the eastern part of the state intersected by the Schoharie Creek, also drained by the Charlotte River and the Catskill and Cobleskill Creeks.

The surface is mostly hilly, the southern part being occupied by a range of highlands called the Helderbergs. This region is well timbered by oak, hickory, ash, sugar maple, elm and other trees. The soil in this section is a dark slate and gravelly loam. These hills decline and become less rugged toward the north and the dark slaty soil becomes more prevalent. In the northeastern part clay loam is quite prominent. Between these hills lie the valleys of Schoharie, Cobleskill and Fox Creeks, where the soil is a dark and yellow clay loam, deep and fertile. The county as a whole is adapted to pasturage, dairying and general farming. The county ranks second in hops and bees and sixth in the production of buckwheat. Some of the leading crops are corn, 197,520 bushels; oats, 573,010 bushels; buckwheat, 240,770 bushels; rye, 34,207 bushels; potatoes, 307,346 bushels; hops, 2,156,883 pounds; hay and forage, 114,376 tons. The valuation of all farm property is \$14,454,132, a gain of 16 per cent. since the census of 1900. The average price of farm land per acre is \$14.36. The price of improved land including buildings is \$29.12. There are a large number of farms listed in this bulletin that can be bought for considerably less than the average of improved land. Domestic animals reported are dairy cows, 26,138; horses, 8,237; swine, 9,645; sheep, 11,422; poultry, 191,463; production of milk, 13,748,588 gallons with a value of \$1,418,629 including all dairy products. There are 30 milk stations and factories in the county.

The D. & H. railroad with a branch extending to Sharon Springs, a popular health resort, intersects the northern part of the county. The waters of this popular health resort are held in high repute for their medicinal value. The establishment of a well equipped school of agriculture in Cobleskill is likely to be accomplished in the near future. The county has 1,202 miles of improved highways and eight miles of state road. Excellent educational facilities are furnished by 179 district schools and the social and agricultural interests are conserved by 9 societies devoted to the interest of the farmer.

TOWN OF BLENHEIM

Population 616

*No. 771—Farm of 197 acres, located 2 miles from Blenheim P. O., 14 miles from railway station at Middleburgh,

on line of M. & S. R. R.; $\frac{1}{2}$ mile from school; 2 miles from church and butter factory. Highways good. Surface of farm, level and rolling. Soil, gravelly loam. Acres in meadow, 97; in natural pasture 20; in timber, 80, white oak,

*Farm is in hands of agent or real estate dealer.

black and red oak, pine, hemlock and basswood. Acres tillable, 117. Fruit, large apple orchard, 200 bearing trees. Large number of hickory nut trees, usually bear about 50 bushels. Best adapted to hay, oats, buckwheat, corn and rye. Fences, mostly wire. House, 30x40, built eight years. Outbuildings, large, over-shot barn, 2 stories and basement, frame of barn entirely of white oak, large enough for 30 head of cattle. Watered, house, by well, barns by running water, fields by springs and streams. Occupied by tenant. Reason for selling, owner has other business. Price, \$4,500. Terms, $\frac{1}{2}$ down, or would sell for \$500 cash and \$25 per month, giving deed when \$1,000 had been paid. Address M. L. Tator, agent, Middleburgh, N. Y.

No. 772—Farm of 53 acres; 6 miles from Stamford P. O., R. D. 1; 6 miles from Stamford railway station, on line of U. & D. R. R.; $\frac{1}{2}$ mile from school and Methodist church; 6 miles from milk station. Highways, hilly. Nearest village, North Blenheim, 3 miles distant, reached by highway. Surface, rolling. Soil, clay loam. Acres in meadow, 7; natural pasture, 10; timber, 36, young pine and hard wood; acres tillable, 8. Fruit, few apple trees. Best adapted to grass. Fences, stone wall, poor condition. No buildings. Watered by spring. Five miles from Catskill Mountains and Mayham Lake. Unoccupied. This would make an ideal place for summer home. Reason for selling, owner has other farms. Price, \$400. Terms, cash. Address Albert C. Mayham, Warwick, N. Y., Orange Co.

No. 773—Farm of 110 acres; 2 miles from Livingstonville P. O.; 9 miles from railway station at Middleburg, on line of M. & S. R. R.; $\frac{1}{2}$ mile from school; 2 miles from churches; 3 miles from creamery. Nearest large village, Middleburg, population 1,100. Highways, good, part hilly and part level. Surface, rolling. Soil, loam. Acres in meadow, 40; in natural pasture, 10; in timber, 10; sugar bush of about 100 trees; acres tillable, 75. Fruit, 50 apple trees, pears and plums. Best adapted to buckwheat, corn, rye, oats, barley, potatoes, etc. Fences, stone wall and wire, in fair condition. House, 51x18, in good condition; another house, 31x21. Outbuild-

ings: barns, 36x28, 40x18 and 30x40, in good condition. Watered by springs. This property is 7 miles from Crystal Lake. Occupied by owner. Reason for selling, to settle an estate. This is a very productive farm. Price, \$1,800. Terms, $\frac{1}{2}$ cash, balance on bond and mortgage. Address C. J. Cornelius, Livingstonville, N. Y.

TOWN OF BROOME

Population 933

No. 774—Farm of 144 acres; $3\frac{1}{2}$ miles from Huntersland P. O.; 4 miles from Livingstonville P. O.; 7 miles from railway station at Middleburg, on line of S. V. R. R.; $1\frac{1}{4}$ miles from school; $1\frac{1}{2}$ miles from Baptist church; $\frac{3}{4}$ mile from Union church; $3\frac{1}{2}$ miles from Methodist church, and butter factory; 2 miles from creamery. Highways, somewhat hilly, but good. Nearest large village, Middleburg, population 1,100, distant 7 miles, reached by highway. Soil, dark loam, good quality. Acres in meadow, 40; natural pasture, 10; timber, 24, maple, beech, hemlock, oak, etc.; acres tillable, 110. Fruit, 125 apple, 15 plum, 12 pear and 3 cherry trees, also currants and gooseberries. Best adapted to rye, oats, buckwheat, barley, corn and potatoes. Fences, rail, stone, wire, rather poor. Medium-sized house, in good condition. Outbuildings: large 2-story barn; small barn; wagon-house; shed; henhouse, etc.; fair condition. Watered, house, by well and spring; barns, by creek; fields, by creek and springs. Good home market for every kind of farm produce $1\frac{1}{2}$ miles distant. Telephone line through section. Occupied by owner. Two fine lakes, one 2 miles and one $2\frac{1}{4}$ miles distant. Reason for selling, advanced age of owner. Price, \$1,800. Terms, $\frac{1}{2}$ down, balance on easy terms. Address Ithamer Bell, Livingstonville, N. Y.

*No. 775—Farm of 60 acres; 10 miles from Middleburg P. O. and station on line of M. & S. R. R.; $\frac{3}{4}$ mile from school; $\frac{1}{4}$ mile from Methodist church; 1 mile from butter factory. Highways, good. Nearest village, Middleburg, population, 1,100, distant 10 miles. Surface, rolling. Altitude, 1,000 feet. Soil, gravelly loam. 20 acres of meadow; 25 acres of natural pasture; 15 acres of timber, mostly hard wood and hemlock;

*Farm is in hands of agent or real estate dealer.

45 acres tillable. Fruit, apples, pears, cherries and plums. Land best adapted to raising hay, oats, corn and potatoes. Fences, mostly stone walls. House, 2 stories, with 21 rooms, in good condition, very suitable for large boarding house. Barn, 20x36, with room for 10 cows; outbuildings all in good condition. House has well water; barns and fields watered by springs. Reason for selling, old age of owner. Price, \$1,200. Terms easy. Address Charles Mann, agent, Middleburg, N. Y.

No. 776—Farm of 40 acres; $\frac{1}{2}$ mile from Livingstonville P. O.; 9 miles from railway station; $\frac{1}{2}$ mile from school and Methodist church; $\frac{1}{2}$ mile from cheese factory. Highways, good. Nearest village, Livingstonville, reached by highway. Occupied by tenant. Surface, some flat land and some side hill. Soil, sandy loam. Firewood sufficient for farm use. Acres tillable, 25. Fruit, plenty of apples. Best adapted to rye, corn, etc. Fences, stone and rail. House $1\frac{1}{2}$ stories, 7 rooms, about 24x30. Small, old barn. Watered by well. Farm borders on Catskill Creek. Reason for selling, owner is a widow and cannot look after place. Price, \$650. Terms, cash. Address Mrs. Maria L. Moore, Preston Hollow, N. Y. Owner will rent.

No. 777—Farm of 253 acres; 9 miles from Middleburg P. O., R. D. 1, and railway station, on line of M. & S. R. R.; $\frac{1}{2}$ mile from school; 1 mile from church; $2\frac{1}{2}$ miles from butter factory. Highways, good. Surface of farm, mostly level and rolling, some hilly. Soil, good gravelly loam. Acres in meadow, 153; in natural pasture, 50; in timber, 50, mostly hard wood; acres tillable, 203. Fruit, 200 apple trees, 25 plum trees, 3 pear trees, black and red raspberries and currants. Best adapted to dairying. Fences, stone and wire, good condition. Two houses, 24x30, good condition. Outbuildings: barn, 48x40; barn, 30x36; barn, 20x55; hogpen, 20x24, new; henhouse, 10x14; new silo, good condition. Watered by running water. Occupied by owner. Reason for selling, poor health of owner. Price, \$2,700. Terms, \$1,250 cash, balance on mortgage at 5%. Address Charles S. Loyd, Middleburg, N. Y., R. D. 1. Owner will rent.

*No. 778—Farm of 166 acres; 7 miles from Middleburg P. O. and railway sta-

tion, on line of M. & S. R. R.; $\frac{1}{2}$ mile from school; $2\frac{1}{2}$ miles from churches and butter factory. Surface of farm, rolling. Altitude, about 1,000 feet. Soil, mixed loam. Acres in meadow, 40; in natural pasture, 60; in timber, 30, mixed; acres tillable, 120. Variety of fruit. Best adapted to hay, oats, rye, corn, potatoes and buckwheat. Fences, wire and stone. House, 12 rooms, fine condition. Outbuildings: barn, 36x48; barn, 25x41; barn, 36x40; wagonhouse, 24x30; henhouse, 24x30; hogpen, 12x24. Watered by well and spring. Crystal Lake is 1 mile from farm. Price, \$3,320. Terms easy. Address Charles Mann, agent, Middleburg, N. Y.

*No. 779—Farm of 200 acres, located 2 miles from Bates P. O., R. F. D.; 20 miles from railway station at Middleburg, on line of M. & S. R. R.; $\frac{1}{2}$ mile from school; 2 miles from Methodist church and butter factory. Highways good. Surface of farm, level and rolling. Soil, gravelly loam. Acres in meadow, 160; in natural pasture, 35; in timber, 15, mostly hardwood. Acres tillable, 150. Fruit, 40 apple trees and some young trees, plenty of small fruit. Best adapted to hay, corn, oats, buckwheat and rye. Fences in good condition. House, large, 12 rooms, good repair, telephone in house. Outbuildings, large barn, 3 stories, wagonhouse, 40x46, basement for 50 sheep, both in good repair. Watered, house by running water, barns by spring, fields by spring. Occupied by owner. Reason for selling, ill health of owner's wife. Price, \$3,750. Terms, would sell on a payment of \$200 down and monthly payments of \$50, giving deed when \$800 had been paid. Address L. J. King, agent, Middleburg, N. Y.

*No. 780—Farm of 100 acres, located 1 mile from Franklinton P. O., R. D. 1, 5 miles from railway station at Middleburg, on line of M. & S. R. R.; $\frac{1}{2}$ mile from school and Methodist church; 1 mile from butter factory. Highways good. Surface of farm, part hilly and part level. Soil, good, gravelly loam. Acres in meadow, 45; in natural pasture, 40; in timber, 15, hemlock, spruce, etc. Acres tillable, 85. Best adapted to hay and grain. Fences, mostly wire, good condition. House, poor condition. Outbuildings, barn, 26x50, with linter, 12x30. Watered, house and barn by well,

*Farm is in hands of agent or real estate dealer.

fields by springs. Occupied by owner. Price, \$1,200. Terms, \$700 down, balance on mortgage at 5%, might sell on favorable contract. Address L. J. King, agent, Middleburg, N. Y.

*No. 781—Farm of 15 acres, located $8\frac{1}{2}$ miles from Middleburg P. O. and railway station, on line of M. & S. R. R.; $\frac{1}{2}$ mile from school and church; $3\frac{1}{2}$ miles from butter factory. Highways good. Surface of farm level. Soil, loam. Acres in timber, 5, spruce, oak, etc. Acres tillable, 10. Fruit, apple trees and some small fruit. Best adapted for poultry farm. Fences, good. House, large, first-class condition. Outbuildings, barn, 18x40, and henhouse, 10x22. Watered, house and barn by well, fields by spring. Occupied by owner. Price, \$1,200. Terms, $\frac{1}{2}$ cash, balance on mortgage at 5%. Address L. J. King, agent, Middleburg, N. Y.

*No. 782—Farm of 68 acres, located 1 mile from Franklinton P. O., 5 miles from railway station at Middleburg, on line of M. & S. R. R.; $\frac{1}{2}$ mile from school and Methodist church; 1 mile from butter factory. Highways good. Surface of farm level. Soil, gravelly loam. Acres in meadow, 50, in natural pasture, 10; in timber, 8. Acres tillable, 60. Fruit, 30 apple trees and some small fruit. Best adapted to hay and grain. Fences, wire and stone, good condition. House, 36x18, first-class condition. Outbuildings, barn, 26x36, small barn, 20x30, wagonhouse, 20x30, hogpen, 14x16, all in good condition. Watered, house by running water, barn by well, fields by spring. Occupied by owner. Price, \$1,700. Terms, \$1,000 down, balance on mortgage at 5%, might sell on contract. Address L. J. King, agent, Middleburg, N. Y.

*No. 783—Farm of 100 acres, located $\frac{1}{2}$ mile from school, postoffice, butter factory and Methodist church. Highways good. Nearest large village, Middleburg, 5 miles distant, reached by highway. Surface of farm, part level, part hilly. Soil, gravelly loam. Acres in meadow, 62; in natural pasture, 20; in timber, 18, pine, hemlock, hardwood. Acres tillable, 82. Fruit, 50 bearing apple trees and other fruit. Well adapted for stock farm. Fences, good. House, main part, 18x40, with addition,

10x40; summer kitchen, 9x14; wood-house, 14x16. Outbuildings, barn, 28x40; wagonhouse, 30x40; shed, 15x30. Watered by well. Occupied by owner. Reason for selling, ill health of owner. Price, \$1,650. Terms, \$950 down, balance on mortgage. Address M. L. Tator, agent, Middleburg, N. Y.

*No. 784—Farm of 160 acres, located 9 miles from railway station at Middleburg, on line of M. & S. R. R.; $\frac{1}{2}$ mile from school; 3 miles from butter factory. Highways good. Surface of farm, level and rolling. Soil, gravelly loam. Acres in meadow, 100; in natural pasture, 30; in timber, 30, mostly spruce. Acres tillable, 130. Fruit, 50 apple trees and some small fruit. Well adapted for dairy farm. Fences, good. House, 24x30, 11 rooms, good condition. Outbuildings, wagonhouse, 30x30; pigpen, 14x18; barn, 30x40, 2 stories, shed and stables, 30x50, wagonhouse and pigpen built in 1902. Watered, house and barn by running water, fields by never-failing springs. Price, \$2,500. Terms, $\frac{1}{2}$ down, balance on mortgage. Address M. L. Tator, agent, Middleburg, N. Y.

*No. 785—Farm of 102 acres, located $3\frac{1}{2}$ miles from Middleburg P. O. and railway station, on line of M. & S. R. R., school next to farm; $1\frac{1}{2}$ miles from Methodist church, butter factory and milk station. Highways good. Surface of farm rolling. Soil, loam. Acres in meadow, 65; in natural pasture, 25; in timber, 12, mostly hardwood. Acres tillable, 90. Fruit, 40 apple trees and other small fruit. Adapted to any crop grown in this section. Fences stone and wire, fair condition. House, large, 10 rooms, good condition. Outbuildings, barn, 36x40; barn, 30x40; shed connects the two, 75 feet long, new henhouse, 12x24; new hogpen, 16x24; cornhouse; icehouse, 12 ft. square; woodhouse, 20x30. Watered by well. Occupied by owner. Price, \$2,700. Terms, \$1,700 down, balance on mortgage at 5%. Address M. L. Tator, agent, Middleburg, N. Y.

*No. 786—Farm of 190 acres, located 5 miles from railway station at Middleburg, on line of M. & S. R. R. Surface of farm rolling. Acres in meadow, 50; in natural pasture, 100; in timber, 40, pine, maple, hemlock and hickory. Acres tillable, 150. Fruit, 50 apple trees, 20

*Farm is in hands of agent or real estate dealer.

pear trees, 20 plum trees and small fruit. Best adapted to oats, rye, barley, potatoes, corn, alfalfa, etc. Fences in good condition, wire and stone. House, 12 rooms, good condition. Outbuildings, barn, 68x26, with basement and ell, 34x20, good condition. Well watered. Price, \$3,500. Terms, $\frac{1}{2}$ cash, balance easy. Address Charles Mann, agent, Middleburg, N. Y.

*No. 787—Farm of 160 acres, located 11 miles from railway station at Middleburg, on line of M. & S. R. R.; $\frac{1}{2}$ mile from school and church. House, 12 rooms, running water, good condition. Good barn, 30x40. Some fruit and timber. Price, \$2,000. Terms, \$500 down, balance easy. Address Charles Mann, agent, Middleburg, N. Y.

*No. 788—Farm of 150 acres, located 1 mile from Franklinton P. O., R. D. 1, 6 miles from railway station at Middleburg, on line of M. & S. R. R.; 1 mile from school and churches $\frac{3}{4}$ mile from butter factory. Highways good. Surface of farm, 30 acres level, balance sloping. Soil, sandy loam. Acres in natural pasture, 20; in timber, 20. Acres tillable, 110. Fruit, 100 apple trees, also pears and small fruit. Best adapted to grain, corn and potatoes. Fences, wire and stone. House, 16 rooms, good condition. Outbuildings, 2 barns, wagonhouse, corn crib and henhouse, good condition. Watered, house and barn by well, fields by spring. Occupied by owner. Price, \$2,400. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

*No. 789—Farm of 52 acres, located 1 mile from Franklinton P. O., R. D. 1, 6 miles from railway station at Middleburg, on line of M. & S. R. R.; 1 mile from school and church; $\frac{1}{2}$ mile from butter factory. Highways good. Surface of farm, slopes to south. Soil, productive loam. Acres in meadow, 35; in natural pasture, 10; in timber, 7. Acres tillable, 40. Fruit, plums, pears and apples. Best adapted to grain, corn, clover and potatoes. Fences, wire and stone. House, 8 rooms, good inside, not painted on outside. Outbuildings, barn, 30x40, hogpen and woodhouse, fair condition. Watered by well and spring. Unoccupied. Reason for selling, owner has too much land. Price, \$800. Terms, \$400 down, balance easy. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

*No. 790—Farm of 60 acres, located 3 miles from Livingstonville P. O., R. D. 1, 10 miles from railway station at Middleburg, on line of M. & S. R. R.; 1 mile from school and church. Surface of farm level. Altitude, 1,000 feet. Soil, sandy loam. Acres in timber, 10, variety. Acres tillable, 50. Best adapted to corn, oats, potatoes, etc. House, 22 rooms. Outbuildings, barn, 40x50, henhouse. Large sugar maple grove near house. Watered by running water. Unoccupied. Reason for selling, advanced age of owner. Price, \$1,200. Terms, $\frac{1}{2}$ down. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

*No. 791—Farm of 286 acres, located $1\frac{1}{2}$ miles from Franklinton P. O., R. D. 1, $6\frac{1}{2}$ miles from railway station at Middleburg, on line of M. & S. R. R.; $1\frac{1}{2}$ miles from school and church; 1 mile from butter factory. Highways good. Surface of farm, level, rolling and hilly. Acres in timber, 35, pine, hemlock, etc. Acres tillable, 250. Fruit, 150 apple trees, also plum and pear trees. Forty walnut and butternut trees. Best adapted to grain, hay, etc. Fences, wire and stone, good. House, 12 rooms, good. Outbuildings, 5 barns, hogpen and henhouse. Watered, house by running water, barns and fields by springs. Brook runs through farm. Price, \$2,200. Terms, \$800 down. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

TOWN OF COBLESKILL

Population 3,579

No. 792—Farm of 106 acres; 1 mile from Howe Cave P. O. and railway station, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school and Reformed church. Highways, good; a State road between Albany and Binghamton passes the house. Nearest large village, Cobleskill, population, 2,000, 5 miles distant, reached by highway. Surface, part rolling, part along the Cobleskill Creek. Soil, very fertile, yellow and clay loam. Acres in meadow, 80; natural pasture, 20; timber, 6, hemlock and hard wood; acres tillable, 100. Fruit, about 25 apple trees. Best adapted to oats, rye, hay. Fences, wire and stone, not very good. House, 16 rooms, 4 halls, large pantry and woodhouse. Outbuildings: barn, cowshed, storehouse, wagonhouse, pigpen and henhouse. Watered, house by

*Farm is in hands of agent or real estate dealer.

wells; barns, by creek; fields, by springs and brooks. Cobleskill Creek bounds farm on the north. Occupied by owner. Reason for selling, owner a widow and cannot attend to farm. Price, \$4,000. Terms, cash preferred but easy terms if necessary. Address Mrs. Mary E. Swart, Howe Cave, N. Y.

No. 793—Farm of 106 acres; 2 miles from Mineral Spring P. O.; 4 miles from railway station, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school; R. D. 1 from Mineral Spring. Highways, good. Nearest large village, Cobleskill, population 2,000, reached by highway. Occupied by owner. Surface, level and rolling. Soil, loam. Acres in meadow, 60; natural pasture, 20; timber, 25; acres tillable, 80. Fruit, 60 apple trees. Best adapted to grain, corn, potatoes and grass. Nine-room house. Outbuildings: barn, 40x50; barn, 15x30; wagonshed, 18x20; henhouse; hogpen. Watered by well and spring. Price, \$2,200. Terms, \$1,000 down, balance on mortgage. Address Charles Wehrstedt, Middleburg, N. Y.

TOWN OF CONESVILLE

Population 708

No. 794—Farm of 120 acres; 1 mile from West Conesville P. O.; 6 miles from Grand Gorge railway station, on line of U. & D. R. R.; $\frac{1}{2}$ mile from school; 1 mile from churches; 3 miles from butter factory and milk station. Highways, somewhat hilly but good. Surface, rolling. Soil, clay loam. Acres in meadow, 50; natural pasture, 40; timber, 30, hard wood, some hemlock; acres tillable, 30. Fruit, 4 pear trees, 10 plum trees, 20 apple trees, also grapes, strawberries and currants. Best adapted to oats, barley, buckwheat and corn. Fences, wire, wall and rail, in good condition. House, upright, 30x20, with wing, 36x16. Outbuildings: barn, 50x30, with shed; pigsty; wagonhouse, 30x32, with horse stable and granary; all in good condition. Watered by well and springs. Farm $1\frac{1}{2}$ miles from Schoharie Creek, Catskill Mountains and Manorkill Creek. Occupied by owner. Price, \$1,800. Terms, $\frac{1}{2}$ cash, balance on bond and mortgage. Owner will rent. Address David N. Patrie, West Conesville, N. Y., Schoharie Co.

*No. 795—Farm of 100 acres, located 2 miles from Conesville P. O., 8 miles

from railway station at Grand Gorge, on line of U. & D. R. R.; $1\frac{1}{2}$ miles from school; 2 miles from Methodist church; 5 miles from butter factory; 2 miles from milk station. Highways in fair condition. Nearest large village, Gilboa, 5 miles distant, reached by highway. Surface of farm, nearly level, a little rough. Soil, fair. Acres in meadow, 45; in natural pasture, 35; in timber, 20, hard wood and hemlock. Acres tillable, 35. Fruit, apples, plums and cherries. Best adapted to corn, potatoes and grain. Fences, wire and stone wall, fair condition. House, 8 rooms, good condition. Outbuildings, 2 large barns, wagonhouse, pigpen and large shed. Watered by spring. Occupied by tenant. Price, \$1,600. Terms, prefer cash. Address R. F. Stevens, agent, Conesville, N. Y. Owner will rent.

*No. 796—Farm of 100 acres, located 2 miles from Manorkill P. O., 12 miles from railway station at Grand Gorge, on line of U. & D. R. R.; 15 miles from railway station at Middleburg, on line of M. & S. R. R.; $\frac{1}{4}$ mile from school and butter factory; 2 miles from Methodist church. Highways good. Surface of farm, some level and some rolling. Soil, gravelly loam. Acres in meadow, 60; in natural pasture, 25; in timber, 15, mostly beech and maple. Acres tillable, 85. Fruit, 25 apple trees and some small fruit. Best adapted for dairy farm. Fences, stone and wire, good condition. Outbuildings, barn, 30x40; wagonhouse, 20x30, and hogpen, 15x20. Watered, running water in house, barns, by water from trough, fields by springs. Occupied by owner. Reason for selling, advanced age and ill health of owner. Price, \$1,250. Terms, will sell on contract of \$200 cash and monthly payments. Address L. J. King, agent, Middleburg, N. Y.

TOWN OF FULTON

Population 1,450

No. 797—Farm of 252 acres; $3\frac{1}{2}$ miles from Fultonham P. O.; 8 miles from railway station at Middleburg, on line of M. & S. R. R.; $1\frac{1}{2}$ miles from school; $1\frac{1}{2}$ miles from Methodist church; 4 miles from butter factory. Highways, good. Nearest village, Fultonham, $3\frac{1}{2}$ miles distant, population 100, reached by highway. Surface, rolling, a little

*Farm is in hands of agent or real estate dealer.

level. Soil, gravelly loam. Land best adapted to corn, potatoes, rye and buckwheat. Fences, in fair condition. Main house, 18x30, wing, 16x20, in fair condition. Barn, 24x50, hophouse, 24x50; shed, 18x50; henhouse, 15x36; crib, 10x16. House watered from spring; barns and fields, from brook. Schoharie Creek 4 miles distant. Occupied by owner. Reason for selling, ill health of owner's wife. Price, \$1,700. Terms, part payment or time if desired. Address Chas. W. Braman, Fultonham, N. Y.

*No. 798—Farm of 120 acres; 2 miles from Fultonham P. O.; 6 miles from station of Middleburg, on line of the M. & S. R. R.; $\frac{1}{6}$ mile from school and Methodist church. Highways, good. Nearest village, Middleburg, population 1,100, 6 miles distant, by highway. Surface, hilly. Soil, slaty, but good. Forty acres of meadow; 30 acres of natural pasture; 30 acres of timber, hemlock (300,000 feet); 80 acres tillable. Fruit consists of apple, pear, peach and plum trees, also small fruit. Land is adapted to hay, corn, rye, wheat, oats and potatoes. Fences, wire and stone. Two-story house, 12 rooms, in fine condition. Barn, 30x40, with room for 10 cows, 4 horses; henhouse; pigpen; all in fine condition. House has well water; barns and fields running water; Schoharie River, 2 miles distant. This is a good investment, a fine place to live, would make good dairy farm and poultry place. Occupied by owner. Price, \$1,400. Terms, easy. Address Chas. Mann, agent, Middleburg, N. Y.

*No. 799—Farm of 130 acres; 6 miles from Richmondville P. O. and station, on line of D. & H. R. R.; $\frac{1}{8}$ mile from school and Methodist church. Highways, good. Nearest village, Eminence, population 300, distant 2 miles by highway. Surface, rolling. Soil, slate loam. Thirty acres of natural pasture; 20 acres of timber, hard wood and maple; acres tillable, about 100. Fruit consists of some apple and small fruits. Land is best adapted to raise oats, rye, corn, hay, potatoes, also for dairying. Twelve-room house, all in fine condition. Large barn, with outbuildings, all in good condition. Running water in house; well at barn, and springs in fields. This would make a very fine dairy farm; it also has fine maple orchard. Occupied by ten-

ant. Reason for selling, death of owner's parents. Price, \$1,500. Terms, \$500 down and balance on easy terms. Address Chas. Mann, agent, Middleburg, N. Y.

*No. 800—Farm of 100 acres; 1 mile from Patria P. O.; 3 miles from station, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school and Protestant church. Highways, good. Nearest village, Middleburg, population 1,100, distant 3 miles by highway. Unoccupied. Surface, part level and part rolling. Soil, loam. 20 acres of meadow; 20 acres of natural pasture; 40 acres of timber, of all kinds; 60 acres tillable. Fruit consists of about 40 apple, cherry, plum and pear trees. Land is adapted to rye, oats, buckwheat, corn, clover, and gardening. Good wire fences. House, 16x26, in fair condition. Large barn, in good condition. House, barns and fields have spring water. Price, \$900. Terms, \$500 down, balance easy payments. Address Charles Wehrstedt, Middleburg, N. Y.

*No. 801—Farm of 100 acres; 5 miles from railway station, on line of D. & H. R. R.; post office at Patria; near school and Protestant church. Highways, good. Nearest large village, Middleburg, population about 1,100, 5 miles distant, reached by highway. Occupied by owner. Rolling surface. Loan soil. Acres in meadow, 40; natural pasture, 40; timber, 20, pine, hemlock, etc.; acres tillable, 80. Fruit, 30 apple trees. Adapted to general farming. Four acres of hops under cultivation. Fences, wire, good condition. House, 13 rooms, good condition. Outbuildings: one barn, 40x60; one, 30x40; hophouse, 24x35; milkhouse, 12x20; henhouse, 12x24; hogpen, 12x20. Watered by well and spring. Price, \$2,250. Terms, \$1,000 down, balance on time. Owner will rent for cash or with option to buy. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

*No. 802—Farm of 150 acres; $\frac{1}{2}$ mile from Fultonham P. O.; 4 miles from railway station, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school and Protestant church. Highways, good. Nearest large village, Middleburg, population about 1,100, reached by highway. Surface, rolling and flat. Soil, loam. Acres in meadow, 40; natural pasture, 35; timber, 75, all kinds; acres tillable, 75. Fruit, 150 trees. Best adapted to grain,

*Farm is in hands of agent or real estate dealer.

corn and potatoes. Fences, fair. House, 2-family house, 14 rooms, with piazza, good condition. Outbuildings: 2 large barns; hogpen; hennery; and wagonhouse. Watered by well and spring. Reason for selling, owner has other farms. Price, \$2,500. Terms, \$800 down, balance on mortgage. Address Chas. Wehrstedt, Middleburg, N. Y.

*No. 803—Farm of 10 acres; $\frac{1}{8}$ mile from Fultonham P. O.; 2 miles from railway station, on line of D. & H. R. R.; 1 mile from school and Protestant church. Highways, good. Nearest large village, Middleburg, population about 1,100, 2 miles distant, reached by highway. Occupied by owner. Surface, level. Soil, loam. Acres in meadow, 6; timber, 4; acres tillable, 6. Fruit, about 50 trees. Fences, wire, good condition. House, 10 rooms, good condition. Outbuildings, barn, 30x35, woodhouse, hennery. Watered by well and spring. Price, \$1,600. Terms, \$500 down, balance on mortgage. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

*No. 804—Farm of 140 acres; $\frac{1}{8}$ mile from Fultonham P. O.; 3 miles from railway station, on line of D. & H. R. R.; 1 mile from school and church. Highways, good. Nearest large village, Middleburg, population about 1,100, 3 miles distant. Occupied by tenant. Surface, level. Soil, dark loam. Acres in meadow, 80; natural pasture, 30; timber, 30, pine, oak, etc.; acres tillable, 110. Fruit, 200 apple trees, also pear, plum and cherry trees. Best adapted to dairying and general farming. Fences, wire, good condition. House, 12 rooms, first-class condition. Outbuildings: barn, 50x60; barn, 30x46; henhouse; hoghouse; smokehouse and woodhouse. Watered by well and spring. Schoharie River runs whole length of farm. Creamery collects milk at door. Price, \$8,500. Terms, \$4,000 down, balance on bond and mortgage. Address Charles Wehrstedt, Middleburg, N. Y.

*No. 805—Farm of 50 acres; $4\frac{1}{2}$ miles from railway station, on line of D. & H. R. R.; close to post office at Patria; school and church nearby. Highways, good. Nearest large village, Middleburg, population 1,100, $4\frac{1}{2}$ miles distant, reached by highway. Unoccupied. Soil, loam. Acres in meadow, 20; natural pasture, 20; timber, 10; acres tillable,

40. Best adapted to grass, grain and potatoes. House, 5 rooms, poor condition. Outbuildings: barn, 30x40; other outbuildings in fair condition. Watered by well, spring and brook. Reason for selling, owner has other farms. Price, \$800. Terms, \$400 down. Address Chas. Wehrstedt, Middleburg, N. Y.

No. 806—Farm of 165 acres; $2\frac{1}{2}$ miles from post office; 9 miles from Richmondville railway station, on line of D. & H. R. R.; $\frac{1}{4}$ mile from school; $\frac{3}{4}$ mile from Methodist church and milk station. Highways, somewhat hilly. Nearest large village, Richmondville, population about 600, reached by highway. Surface, a little rolling. Soil, gravel and limestone. Acres in meadow, 70; natural pasture, 60; timber, 30, oak, maple and beech; acres tillable, 135. Fruit, about 35 apple trees. Best adapted to potatoes, buckwheat, barley and oats. Fences, stone wall, fair condition. House, $1\frac{1}{2}$ stories, fair size, good condition. Outbuildings: quite a large barn, in fair condition; wagonhouse; pigpen. Watered by well and spring. Occupied by tenant. Reason for selling, owner has not the time to look after farm. A new railroad will soon be completed which will be within 4 miles of farm. Price, \$1,500. Terms, \$500 down, balance on mortgage, 5% interest. Owner will rent with option to buy. Address John E. Wharton, Summit, Schoharie Co., N. Y.

*No. 807—Farm of 100 acres; 5 miles from railway station on line of D. & H. R. R.; close to post office, school and Protestant church. Highways, good. Nearest large village, Middleburg, 5 miles distant, reached by highway. Occupied by owner. Surface, level. Soil, loam. Acres in meadow, 40; natural pasture, 40; timber, 20; acres tillable, 60. About 50 fruit trees. Best adapted to corn, grain, potatoes, etc. Fences, wire, good condition. House, 7 rooms, piazza, good condition. Outbuildings: barn, 30x40; barn, 20x40; wagonhouse, 24x18; henhouse; hogpen and blacksmith shop. Watered by well and spring. Price, \$2,000. Terms, $\frac{1}{2}$ down, balance on time. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

*No. 808—Farm of 9 acres; $\frac{1}{2}$ mile from Middleburg P. O., and railway station, on line of D. & H. R. R.; $\frac{1}{2}$ mile from high school and all churches; R. D.

* Farm is in hands of agent or real estate dealer.

1 from Middleburg. Highways, good. Nearest large village, Middleburg, reached by State road. Occupied by owner. Surface, level. Soil, loam. Acres tillable, 9. Best adapted to corn and vegetables. Fences, wire, good condition. House, 18 rooms, piazza, first-class condition. Outbuildings: barn, 30x40; cornhouse, 18x24; henhouse; ice-house; and dancing hall. This place is situated on the Schoharie River. Reason for selling, advanced age of owner. Price, \$4,000. Terms, \$1,000 down, balance on mortgage. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

*No. 809—Farm of 100 acres, located $\frac{1}{8}$ mile from Patria P. O., 6 miles from railway station at Cobleskill, on line of D. & H. R. R.; $\frac{1}{8}$ mile from school and church. Highways good. Surface of farm, sloping. Soil, loam. Acres in timber, 25. Acres tillable, 75. Fruit, 30 apple trees. Best adapted to grain, corn, potatoes, etc. Fences, wire, good. House, 11 rooms, 2 stories, woodhouse connected. Outbuildings, barn, 40x60, barn, 30x40; hophouse; milkhouse; henhouse and hogpen. Watered, house by well, barns and fields by spring. Occupied by owner. Price, \$2,200. Terms, \$800 down, balance on time. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

*No. 810—Farm of 100 acres, located $\frac{1}{8}$ mile from Patria P. O., 6 miles from railway station at Cobleskill, on line of D. & H. R. R.; $\frac{1}{8}$ mile from school and church. Highways good. Surface of farm level. Soil, sandy loam. Acres tillable, 90. Fruit, apple orchard. Best adapted to grain, corn and vegetables. Fences, wire, good. House, 2 stories, 26x36, built two years ago. Outbuildings, barn, 40x50; shed; hogpen and henhouse, good condition. Watered, house and barn by well, fields by springs. Occupied by owner. Price, \$2,000. Terms, \$1,000 down. Address Chas. Wehrstedt, Middleburg, N. Y.

*No. 811—Farm of 50 acres, located $\frac{1}{8}$ mile from Patria P. O., 6 miles from railway station at Cobleskill, on line of D. & H. R. R.; $\frac{1}{8}$ mile from school and church. Highways good. Surface of farm level. Soil, loam. Acres tillable, 45. Fruit, apple orchard. Best adapted to grain, corn, potatoes, etc. Fences,

wire, good condition. House, 12 rooms, woodhouse and summer kitchen. Outbuildings, barn, 40x40, with basement, hogpen, etc., all in good condition. Watered, house by well, fields and barns by spring. Occupied by owner. Reason for selling, owner wants to buy a larger farm. Price, \$1,200. Terms, \$800 down, balance on time. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

*No. 812—Farm of 83 acres, located $\frac{1}{8}$ mile from Patria P. O., 6 miles from railway station at Cobleskill, on line of D. & H. R. R.; $\frac{1}{8}$ mile from school and Methodist church. Highways good. Surface of farm, partly level and partly rolling. Altitude about 1,800 feet. Soil, loam. Acres in natural pasture, 20, in timber, 20, oak and hemlock. Acres tillable, 43. Fruit, apples, plums and pears. Best adapted to grain, corn, potatoes, etc. Fences, wire, good. House, 9 rooms, good condition, with woodhouse connected. Outbuildings, barn, 30x40, hogpen and henhouse. Watered, house by running water, barn and fields by spring. Unoccupied. Reason for selling, owner a widow, advanced in years. Price, \$1,000. Terms, \$600 down. Address Chas. Wehrstedt, Middleburg, N. Y.

TOWN OF GILBOA

Population 1, 467

*No. 813—Farm of 110 acres; $4\frac{1}{2}$ miles from Stamford P. O. and railway station, on line of U. & D. R. R.; $\frac{1}{2}$ mile from school and church; $4\frac{1}{2}$ miles from butter factory. Highways, fairly good. Nearest large village, Stamford, population about 1,000, reached by highway. Surface, rolling. Acres in meadow, 30; natural pasture, 50; timber, 30, hard wood, some hemlock; acres tillable, 50. Fruit, about 30 apple trees, few cherry trees. Best adapted to oats, potatoes, buckwheat and rye. Fences, mainly stone wall, in fair condition. House, 26x36, woodhouse attached, fair condition. Barn, 30x40, stable attached, fair condition. Watered by springs. This would make a good dairy farm. Occupied by tenant. Price, \$1,800. Terms, part cash, balance on mortgage. Owner will rent. Address Harriet E. Wheeler, owner, 136 Lancaster Street, Albany, N. Y., or M. S. Wilcox, agent, Jefferson, N. Y.

* Farm is in hands of agent or real estate dealer.

*No. 814—Farm of 270 acres; near Broome Center; R. D.; 10 miles from railway station at Grand Gorge, on line of U. & D. R. R.; $\frac{1}{2}$ mile from school and churches; $\frac{1}{2}$ mile from butter factory. Highways, level and fairly good. Nearest village, Gilboa, 7 miles distant, reached by highway. Altitude, 1,000 feet. Soil, gravelly loam. Acres in meadow, 75; in natural pasture, 75; in timber, 50, hard wood, maple, beech and birch; acres tillable, 70. Small apple orchard of 50 trees. Best adapted to potatoes, oats, rye and buckwheat. Fences, fairly good. Cottage, 21x21, wing, 20x19, woodshed, 19x8; cottage 22x18, wing, 20x14; hotel, 2 $\frac{1}{2}$ stories 42x35, wing, 32x35. Hotel barn, 80x30; woodshed, 42x17; store building, 60x20; cellar under same; farm barn, 80x30; horse barn, 40x30, 40x16; hay barn, 40x30; hogpen; henhouse, etc. Occupied by owner. Reason for selling, old age and poor health. Price, \$5,000. Terms, $\frac{1}{2}$ cash, balance easy payments. Address, John B. Bouck, Broome Center, N. Y., R. D.

No. 815—Farm of 202 acres; 2 $\frac{1}{2}$ miles from Grand Gorge P. O.; 3 miles from railway station at Grand Gorge and South Gilboa, on line of U. & D. R. R.; 1 mile from school; 1 $\frac{1}{2}$ miles from church; 2 miles from butter factory; 1 $\frac{1}{2}$ miles from milk station. Highways, good. Nearest large village, Stamford, population about 1,000, reached by rail and highway, 7 miles distant. Surface of farm, rolling. Soil, gravelly loam. Acres in meadow, 100; in natural pasture, 27; in timber, 75, hard wood, beech, ash and maple; acres tillable, 100. Fruit, 35 apple trees, besides pears, cherries, plums, grapes, currants and berries. Best adapted to hay, oats, corn, buckwheat and potatoes. Fences, barbed wire, good condition. House, 22x36, 2 stories, nearly new, excellent condition. Outbuildings: barn, 48x20, with stable; barn, 60x18; barn, 30x20, nearly new. Watered by well, spring and stream. Occupied by owner. Reason for selling, to close an estate. Price, \$6,000, including 19 cows, 3 horses, 4 head of young stock or \$5,000 for farm alone. Address Mrs. R. E. Mayhan, South Gilboa, N. Y., Box 17. Owner will rent.

No. 816—Farm of 115 acres, located 2 miles from Gilboa P. O., 3 miles from railway station at Grand Gorge, on line

of U. & D. R. R.; 1 mile from school; 2 miles from churches, butter factory and milk station. Highways good. Nearest city, Oneonta, 33 miles distant, population about 10,000, reached by rail and highway. Surface of farm rolling. Altitude 1,600 feet. Soil, clay loam. Acres in meadow, 65; in natural pasture, 15, some timber. Acres tillable, 50 to 75. Best adapted to hay, grain and dairying. Fences, mainly stone, fair condition. House, good size, nearly new. Outbuildings nearly new. Watered, house and barn by running water, fields by springs and stream. Occupied by owner. Reason for selling, ill health of owner. Price, \$3,000. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address John P. Grant, Stamford, N. Y.

TOWN OF JEFFERSON

Population 1,280

*No. 817—Farm of 240 acres; 1 $\frac{1}{2}$ miles from Jefferson P. O.; 6 miles from railway station, on U. & D. R. R.; $\frac{1}{2}$ mile from school, churches, butter factory and milk station. Highways, fairly good. Nearest large village, Stamford, population about 1,000, reached by highway. Surface, rolling and level. Soil, good gravelly loam. Acres in meadow, 60; natural pasture, 130; timber, 50, spruce and hemlock; acres tillable, 120. Fruit, about 30 apple trees and a few pear trees. Best adapted to grass, oats, potatoes, buckwheat and rye. Fences, stone. House, 9 rooms, fair condition. Outbuildings: barn and cow stable, 46x60; hogpen; granary and horse barn, 26x36. Watered, house, by well; barns and fields, by springs. Summit Lake, 7 miles distant. The spruce and hemlock standing on this farm put into lumber would half pay for farm. Occupied by tenant. Reason for selling, owner desires to avoid care of farm. Price, \$20 per acre, depending on whether spruce and hemlock are reserved or sold with farm. Terms, small amount down, balance on mortgage. Owner will rent. Address Harriet E. Wheeler, owner, 136 Lancaster Street, Albany, N. Y., or M. S. Wilcox, agent, Jefferson, N. Y.

No. 818—Farm of 183 acres; 2 miles from Jefferson P. O.; 6 miles from Stamford railway station, on line of U. & D. R. R.; 12 miles from Richmond-

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ville, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school; 2 miles from high school; $\frac{1}{2}$ mile from church; 2 miles from butter factory. Highways, slightly hilly but good. Nearest large village, Stamford, population 1,000, 6 miles distant, reached by highway. Surface, rolling. Soil, loam. Acres in meadow, 60; natural pasture, 65; timber, 58; beech, maple, spruce and hemlock; acres tillable, 75. Fruit, apples, pears, plums, standard varieties, enough for home use every year. Best adapted to hay, corn, potatoes, etc. Fences, stone wall and wire, good condition. House, 2 stories, 24x30, wing, 20x30, good condition. Outbuildings: barn, about 40x60, with wing, 27x27, fair condition; wagonhouse, 24x24, with wing, 15x30, fair condition. Watered by springs and creek. Two trout brooks run through farm. Occupied by owner. Reason for selling, owner desires to retire. Price on application. Terms, part down, balance on bond and mortgage. Address Stephen S. Jones, Jefferson, N. Y.

No. 819—Farm of 130 acres; $3\frac{1}{2}$ miles from Summit P. O.; 7 miles from railway station at Richmondville, on line of D. & H. R. R.; $\frac{3}{4}$ mile from school; 2 miles from church; $3\frac{1}{2}$ miles from butter factory, high school and stores; 1 mile from milk station. R. F. D. Highways, good. Nearest villages: Cobleskill, population 2,000, 14 miles distant; Richmondville, population 600, 7 miles distant; Jefferson, $5\frac{1}{2}$ miles distant; stage runs from Jefferson to Summit and Richmondville. General surface, rolling, smooth to plow and mow. Soil, good for all crops. Acres in meadow, 40; in natural pasture, 65; in timber, 25, some fine spruce and ash, maple and beech. Seventy apple trees, early and late varieties, 4 pear trees, several plum trees, all trees good fruit. Best adapted to corn, oats, potatoes, good grass or any ordinary crops. Fences, mostly walls. House, 24x25x16, wing, 15x17x10, painted white, in good condition. Barns, 14x25x50, 36x21x12, 55x15x12; wagonhouse, 36x36x10; storehouse, 26x46x16; comfortable barn, not painted. Watered by good well; barns by spring a few rods away; fields, by good springs. $3\frac{1}{2}$ miles from Summit Lake; 7 miles from Mt. Jefferson. Good dairy farm, owner has kept 20 cows.

Unoccupied. Reason for selling, failing health of owner. Price, \$2,400. Terms, easy. Address J. W. Vaughn, Jefferson, Schoharie Co., N. Y.

*No. 820—Farm of 220 acres; $1\frac{1}{2}$ miles from Jefferson P. O.; 6 miles from Stamford railway station, on line of U. & D. R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{2}$ miles from churches, butter factory and milk station. Highways, fairly good. Nearest village, Jefferson, with 3 churches, 8 stores, high school, steam sawmill, 3 blacksmith shops, and hotel. Surface, rolling and level. Soil, good loam. Acres in meadow, 50; natural pasture, 110; timber, 60, maple, beech and ash; acres tillable, 100. Fruit, apple. Best adapted to grass, oats, potatoes, buckwheat and rye. Fences, stone and wire, fair condition. House, large, 2 stories, built for summer boarders. Outbuildings: barn, 60x46, recently built, basement cow stable attached to barn. Watered, house, by well; barns and fields, by springs. Delaware River 6 miles distant. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$20 per acre. Terms, part cash, balance on time. Owner will rent. Address Harriet E. Wheeler, 136 Lancaster Street, Albany, N. Y., or M. S. Wilcox, agent, Jefferson, N. Y.

*No. 821—Farm of 115 acres; $1\frac{1}{2}$ miles from Jefferson P. O.; 12 miles from railway station at Richmondville, on line of D. & H. R. R.; 7 miles from Stamford, on U. & D. R. R.; $1\frac{1}{2}$ miles from school, churches, butter factory and milk station. Highways, good. Nearest village, Jefferson, population 500, $1\frac{1}{2}$ miles distant, reached by highway. Surface, part hilly, part rolling. Acres in meadow, 30; in natural pasture, 60; in timber, 25, hard wood; acres tillable, 50. Fair orchard of grafted fruit. Best adapted to potatoes, oats, buckwheat and grass. Fences, largely stone walls. House, $1\frac{1}{2}$ stories, 26x36, fair condition. Barn, 30x40 and stable, fair condition. Watered from well; barns and fields, by springs. Occupied by tenant. Reason for selling, owner wants larger farm. Price, \$1,200. Terms, $\frac{1}{2}$ cash, $\frac{1}{2}$ bond and mortgage. Owner will rent. Address M. S. Wilcox, attorney, Jefferson, Schoharie Co., N. Y.

* Farm is in hands of agent or real estate dealer.

TOWN OF MIDDLEBURG

Population 2,553

No. 822—Farm of 126 acres; 1 mile from Huntersland P. O.; 4 miles from railway station at Middleburg, on line of M. & S. R. R.; 1 mile from school, churches and butter factory. Highways, good. Surface of farm, part hilly and part rolling. Altitude, about 800 feet. Soil, good. Acres in meadow, 25; in natural pasture, 75; in timber, 26, hard wood; acres tillable, 100. Fruit, apples, pears and cherries. Best adapted to buckwheat, oats, corn and rye. Fences, stone walls, fair condition. House, 20x30, fair condition. Outbuildings, barn, 26x36; hogpen, 15x20; shed, 15x25, fair condition. Watered by running water. Unoccupied. Reason for selling, owner has too much land. Price, \$1,000. Terms, \$500 down, balance on mortgage. Address Otto Gridley, Middleburg, N. Y.

No. 823—Farm of 85 acres; 4½ miles from Middleburg P. O.; 3 miles by private road; 4½ miles from railway station at Middleburg, on line of M. & S. R. R. and D. & H. R. R.; 1 mile from school; 1 mile from Protestant church; 4½ miles from churches of various denominations; 4½ miles from butter factory. Highways, somewhat hilly, but good. Nearest city, Albany, population 100,000. 28 miles distant, reached by rail and State road. Surface of farm, rolling and level. High, healthful location, overlooking Schoharie Valley. Soil, loam. Acres in meadow, 30; in natural pasture, 20; in timber, 5, oak, maple, white and yellow pine; acres tillable, 60. Fruit, 40 apple trees, 1 plum tree, 1 cherry and 2 pear trees. Best adapted to oats, corn, hops, buckwheat, hay and potatoes. Fences, wire and stone wall, in good condition. House, 42x24, 8 rooms in good condition, addition, 12x16; interior of house, with the exception of 2 rooms, has been recently repapered and painted. Barn, 30x48, has new roof, needs a little repairing on outside. Watered, house, by well; barns and fields, by spring. 10 miles from Warners Lake. Occupied by owner. Reason for selling, owner in poor health. Price, \$1,750. Terms, \$1,000 cash, balance on mortgage, easy terms. Address Charles F. Goepel, Middleburg, N. Y.

No. 824—Farm of 84 acres; in village of Huntersland; 5 miles from railway station at Middleburg, on line of M. & S. R. R.; 1/16 mile from school; 1/5 mile from churches; 1/8 mile from butter factory. Highways, good. Surface of farm, rolling, level and hilly. Altitude, about 800 feet. Good soil. Acres in meadow, 20; in timber, 8, maple, beech, black birch, good condition; acres tillable, 75. Fruit, apple orchard of about 100 trees. Best adapted to buckwheat, corn, oats, potatoes hops, dairying, poultry raising, etc. Fences, stone walls and woven wire. House, good, 2 stories, 9 rooms. Outbuildings: good barn; cow house; sheds; wagonhouse; hop-house. Watered, house, by driven well; barn, by brook; fields, by springs and brook. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$1,800. Terms, easy. Address Albert Becker, Middleburg, N. Y.

No. 825—Farm of 100 acres; 5 miles from Schoharie P. O., R. D. 1; 4 miles from railway station at Middleburg, on line of M. & S. R. R.; 1/8 mile from school and church; 4 miles from butter factory. Highways, somewhat hilly but good. Surface of farm, rolling, some parts stony. Altitude, about 1,800 feet. Soil, loam with clay subsoil. Acres in meadow, 20; in natural pasture, 20; in timber, 25, pine, hemlock, oak and maple; acres tillable, 36. Fruit, apples, plums and pears. Best adapted to hops, potatoes, oats, rye and buckwheat. Fences, stone and stump, some good and some in poor condition. House, 8 rooms, good condition. Outbuildings: 2 barns, 30x40, each; shed, 20x40; chickenhouse. Watered, house, by well and spring; fields, by spring. Occupied by tenant. Price, \$2,100. Terms, \$1,500 down, balance on mortgage. Address A. G. Veith, Schoharie, N. Y., R. D. 1.

*No. 826—Village place of 3 acres; located in village of Middleburg, N. Y.; 1 mile from railroad station of Middleburg, on line of M. & S. R. R.; school and Methodist, Lutheran and Reformed churches in village; also butter factory. Middleburg has a population of 1,100. Surface, level. Altitude, about 700 feet. Soil, gravelly loam. The 3 acres are all tillable. Fruit, 5 pear, 30 cherry, 9 plum and 2 peach trees, also very fine strawberry and raspberry

* Farm is in hands of agent or real estate dealer.

plots and fine garden. Large 2-story house with 16 rooms, large piazza on two sides of house, city water, bath tubs; house alone is valued at \$4,000. Barn, 18x24, with wing 12x18; henhouse and icehouse. House and barns have city water connected. This is a very good residence on the main street of Middleburg, in fine location. Occupied by owner. Price, \$4,200. Terms, \$2,000 down, balance on easy payments. Address Chas. Mann, agent, Middleburg, N. Y.

No. 827—Farm of 18 acres; $1\frac{1}{2}$ miles from Middleburg P. O. and station, on line of M. & S. R. R.; $1\frac{1}{2}$ miles from school; 1 mile from Protestant churches; $1\frac{1}{2}$ miles from cheese factory. Highways, good, level. Nearest village, Middleburg, $1\frac{1}{2}$ miles distant by highway, with population of 1,100. Surface, level. Altitude, 900 feet. Soil, limestone. 8 acres of meadows; 6 acres of natural pasture; 18 acres tillable. Number of very fine apple, pear, plum and peach trees, and small fruits of all kinds. Adapted to raising alfalfa, hay, potatoes and oats. Fences, in fair condition. Cottage house of 9 rooms, in good condition. Barn, 24x30, with fine wagonhouse and all outbuildings, in good condition. House has well water; barns, well water; fields, running water. The Schoharie River borders on this farm. It has a fine view of country; is on fine stone roads near good markets. Occupied by the owner. Possession can be given immediately. Reason for selling, age of owner. Price, \$2,200. Terms, \$1,000, remainder on easy terms. Address agent, Charles Mann, Middleburg, N. Y.

*No. 828—Farm of 319 acres; $3\frac{1}{2}$ miles from Middleburg P. O., R. D. 1, and station on line of M. & S. R. R.; 1 mile from school; $3\frac{1}{2}$ miles from churches and butter factory. Good crushed-stone roads. Nearest village, Middleburg, population 1,100, distant about $3\frac{1}{2}$ miles by highway. Surface, hilly, rolling, and some level. Soil, slaty loam. 30 acres of meadow; 50 acres of natural pasture; 80 acres of timber; 18,000 feet of hemlock, besides beech, birch and maple in abundance; acres tillable, 200. Over 100 fine apple trees. Crops of alfalfa, hay, rye, oats, corn and potatoes can be raised. Good wire

fences. 7-room cottage, in good condition; 2-story house of 6 rooms. Barns: 30x40 with cow shed for 25 cows, and fine silo; another for sheep, 80 feet long; with all outbuildings in good condition. House has well water; barns have running water; fields have springs. A fine dairy and sheep farm, also 10 acres of good hops. Occupied by tenant. Possession can be given at once. Reason for selling, owner has too much other business. Price, \$3,300. Terms, \$1,500 down, remainder on easy payments. Address agent, Chas. Mann, Middleburg, N. Y.

*No. 829—Farm of 140 acres; $\frac{3}{4}$ mile from Middleburg P. O. and station, on line of M. & S. R. R.; 1 mile from school, Protestant churches and butter factory. Highways, level. Nearest village, Middleburg, distant about 1 mile, population 1,100, reached by highway. Surface, level. Soil, a very fine loam. 20 acres of meadow; 20 acres of natural pasture; 10 acres of timber, hardwood, pine and hemlock; 130 acres tillable. Fine young orchard, besides pears, plums, cherries, peaches, and other small fruits. Adapted to raising of alfalfa, hay, wheat, corn and rye. Fences, in good condition, wire. New 2-story house, 10 rooms, in fine condition. Barn, 45x65, with shed, corncrib, hop-house, henhouse, wagonhouse; all outbuildings in good repair. House and barns have well water; fields have running water. This is a very fertile farm and a good money-maker. Occupied by tenant. Reason for selling, old age of owner. Price, \$9,500. Terms, \$2,000 down with easy terms. Address Chas. Mann, agent, Middleburg, N. Y.

*No. 830—Farm of 150 acres; $2\frac{1}{2}$ miles from Middleburg P. O. and station on line of the M. & S. R. R.; $\frac{1}{6}$ mile from school; $3\frac{1}{2}$ miles from Protestant churches and butter factory. Highways, good. Nearest village, Middleburg, population 1,100, $3\frac{1}{2}$ miles distant by highway. Surface, rolling. Altitude, 700 feet. Soil, limestone. Acres of meadow, 25; in natural pasture, 40; in timber, 50; acres tillable, 100. Over 50 fine apple trees, and pears, plums, peaches and small fruit. Adapted to raising of hay, rye, corn, oats, alfalfa and clover. Fences, wire. House, 2 stories, 15 rooms, painted.

* Farm is in hands of agent or real estate dealer.

Barn, 40x60, in fine condition, with wagonhouse, henhouse, icehouse and a good sawmill. House is watered by well water; barn, by running water; fields, by brooks. This is a fine dairy farm, with sawmill and good waterpower. Occupied by owner. Reason for selling, owner tired of farming. Price, \$3,200. Terms, easy. Address agent, Chas. Mann, Middleburg, N. Y.

*No. 831—Farm of 300 acres; $1\frac{1}{4}$ miles from Middleburg P. O. and railroad station, on line of the M. & S. R. R.; $1\frac{1}{4}$ miles from school, Protestant churches and butter factory. Highways, good. Nearest village, Middleburg, population 1,100, distant $1\frac{1}{4}$ miles by highway. Surface, partly level and partly rolling. Altitude, 1,000 feet. Soil, good. 60 acres of meadow; 40 acres of natural pasture; 100 acres of timber, pine, hemlock and oak; acres tillable, 200. 300 apple, pear, plum and peach trees, and all small fruit in abundance. Crops easily raised of hops, corn, rye, hay and potatoes. Fences, wire. House, 10 rooms. Barn, 50x55; another, 26x76; another, 24x30; another, 24x70; hop-house; pigpen; milk and icehouse; all in good condition. House, barn and fields have running water. This is a good sheep and dairy farm. Occupied by tenant. Reason for selling, owner has other farms. Price, \$4,000. Terms, \$2,000 down, balance on easy terms. Address Chas. Mann, agent, Middleburg, N. Y.

*No. 832—Farm of 160 acres; 4 miles from Middleburg P. O. and railway station, on line of the M. & S. R. R.; 1 mile from school; 4 miles from churches and butter factory. Highways, good. Nearest large village, Middleburg, population 1,100, 4 miles distant, reached by highway. Surface, rolling. Acres in meadow, 30; in natural pasture, 40; in timber, 13, hemlock, maple, spruce and oak; acres tillable, 120. Fine fruit, 18 acres of good hops. Best adapted to hops, alfalfa, all crops grown in this climate. Fences, wire, in good condition. Cottage house, 8 rooms, all painted; house in good condition, with running water. Barn suitable for 20 cows, 6 horses, size 36x60, good hop-house and all outbuildings. Watered by running water from springs. Occupied by owner. Price, \$5,200. Terms,

easy. Address Charles Mann, agent, Middleburg, Schoharie Co., N. Y.

*No. 833—Farm of 112 acres; $3\frac{1}{2}$ miles from Middleburg P. O. and railway station, on line of M. & S. R. R.; 400 feet from school; $3\frac{1}{2}$ miles from churches and butter factory. Highways, good. Nearest large village, Middleburg, population 1,100, $3\frac{1}{2}$ miles distant, reached by highway. Surface, mostly level. Soil, slaty. Acres in meadow, 12; in natural pasture, 15; in timber, 15; acres tillable, 80. Fruit for family use. Best adapted to hay, oats, rye, potatoes, alfalfa. Fences, good. Cottage house, 12 rooms. Watered by well and springs. Occupied by owner. Reason for selling, owner has too many farms. Price, \$3,200. Terms, easy. Address Charles Mann, agent, Middleburg, Schoharie Co., N. Y.

*No. 834—Farm of 85 acres; 2 miles from Middleburg P. O. and railway station, on line of M. & S. R. R.; $\frac{3}{4}$ mile from school; 2 miles from churches and butter factory. Highways, good. Nearest village, Middleburg, population 1,100, 2 miles distant, reached by highway. Surface, rolling. Soil, slaty loam. Acres in meadow, 10; in natural pasture, 15; in timber, 12, pine, birch and oak; acres tillable, 65. 165 apple trees and small fruits. Best adapted to general farming. Fences, in good condition. Cottage house, 9 rooms, in good condition. Barn for 30 cows, 4 horses, in good condition. Watered by springs. Occupied by owner. Reason for selling, owner has too many farms. Price, \$2,200. Terms, easy. Address Charles Mann, agent, Middleburg, Schoharie Co., N. Y.

*No. 835—Farm of 220 acres; 6 miles from Middleburg P. O. and station, on line of the M. & S. R. R.; $1\frac{1}{2}$ miles from school and Methodist church; $1\frac{1}{2}$ miles from butter factory. Highways, good. Nearest village is Middleburg, population 1,100, distant about 6 miles. Surface, rolling. Altitude, 1,200 feet. Soil, slate. 40 acres of natural pasture; 25 acres of timber, hard wood and hemlock; acres tillable, 190. Fruit, apple and small fruit trees. Adapted to raising of hay, oats, potatoes and buckwheat. Fences, rails. House, in cottage style, 9 rooms; tenant

* Farm is in hands of agent or real estate dealer.

house, 8 rooms. Barn, 28x68, and all outbuildings in good condition. House has well water; barns and fields have running water. Crystal Lake, 3 miles distant. This would make a very fine dairy and sheep farm, and is very productive. Occupied by owner. Reason for selling, poor health of owner. Price, \$2,200. Address agent, Charles Mann, Middleburg, N. Y.

*No. 836—Farm of 100 acres; 2½ miles from Middleburg P. O. and railway station, on line of M. & S. R. R.; ½ mile from school; 2½ miles from churches and butter factory. Nearest village, Middleburg, population 1,100, 2½ miles distant, reached by highway. Surface, level. Soil, good. Acres in meadow, 15; in natural pasture, 12; in timber, 25; acres tillable, 65. Good fruit. Best adapted to hops, oats, corn, and potatoes. Fences in good condition. Cottage house, 10 rooms, all painted and in good condition. Watered by well and springs. Occupied by owner. Reason for selling, illness in owner's family. Price, \$2,500. Terms, easy. Address Charles Mann, agent, Middleburg, Schoharie Co., N. Y.

*No. 837—Farm of 45 acres, located 3 miles from Huntersland P. O., 6 miles from railway station at Middleburg, on line of M. & S. Ry., 1½ miles from school and church, 3 miles from butter factory. Highways good. Surface of farm level. Soil, loam. Acres in timber, 25, second growth. Acres tillable, 20. Best adapted to grain, corn and oats. House, 7 rooms, wood shed. Outbuildings: barn, 25x35, fair condition. Watered, house and barn by well, fields by spring. Occupied by tenant. Reason for selling, owner lives in another state. Price, \$600. Terms, ½ down, balance \$50 yearly. Address Charles Wehrstedt, agent, Middleburg, N. Y.

*No. 838—Farm of 190 acres, located 3½ miles from Middleburg P. O. and railway station, on line of M. & S. R. R.; ⅛ mile from school and church. Highways good. Surface of farm, part level, part side hill. Soil, loam. Acres in natural pasture, 40; in timber, 70. Acres tillable, 80. Fruit, 50 apple trees. Best adapted to grain, corn, potatoes, etc. Fences, wire and stone, good. House, new 8 rooms and piazza. Out-

buildings: barn, 30x40; barn, 18x36 and hogpen. Watered, house by well; barn and fields by spring. Occupied by owner. Price, \$2,000. Terms, \$700 down, balance on time to suit purchaser. 4 acre hop yard on this farm. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

*No. 839—Farm of 50 acres, located 2½ miles from railway station at Middleburg, on line of M. & S. Ry.; ½ mile from school, 2 miles from churches and butter factory. Highways good. Surface of farm level. Soil, sandy loam. Acres in timber 8. Acres tillable 42. Fruit, 175 apple, 50 peach, 4 pear and 6 plum trees. Adapted to grain, corn and vegetables. Fences, wire, good. House, 7 rooms. Outbuildings: barn, 26x50; barn, 28x32. Watered, house by well, barns and fields by spring. Occupied by owner. Reason for selling, owner wants to buy a larger farm. Price, \$1,400. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

*No. 840—Farm of 98 acres, located 2 miles from Middleburgh P. O. and railway station, on line of M. & S. Ry.; 1 mile from school and church, 2 miles from butter factory. Highways, good. Surface of farm, half hilly and half level. Soil, loam. Acres in meadow, 62; in natural pasture, 8; in timber, 28, hardwood, oak and hemlock. Acres tillable, 70. Fruit, 40 apple trees and other small fruit. Best adapted to potatoes, grain and hops. Fences, wire and stone, good condition. House, large, 12 rooms, good condition. Outbuildings: barn, hophouse, henhouse, hogpen, good condition. Watered, house by pump, barns and fields by springs. Occupied by owner. Reason for selling, owner in other business. Price, \$1,200. Terms, \$900 cash, balance on mortgage. Owner will include a team of horses, wagons and farm machinery in above price. Address M. L. Tator, agent, Middleburg, N. Y.

*Farm 841—Farm of 63 acres, located 3 miles from railway station at Middleburgh, on line of M. & S. Ry. Fine young orchard of 160 apple trees, also plenty of plums, cherries, grapes, peaches and pears. A fine meadow in alfalfa. Good soil. Best adapted to corn, wheat, potatoes, rye, hay, etc. House, 10 rooms with porch, good condition. Outbuild-

* Farm is in hands of agent or real estate dealer.

ings in good condition. Well watered. 1/16 mile from school, 3 miles from churches. Price, \$2,800. Address Chas. Mann, agent, Middleburg, N. Y.

*No. 842—Farm of 18 acres, 1 mile from railway station at Middleburg, on line of M. & S. Ry. Fine fruit. Soil, limestone. Good place for poultry and gardening. Good house and barn. Price, \$1,550. Terms easy. Address Chas. Mann, agent, Middleburg, N. Y.

*No. 843—Farm of 120 acres, located 3 miles from railway station at Howe Cave, on line of D. & H. Ry.; 1 mile from school and church. Surface, rolling. Good soil. A fine orchard. Running water at house and barn. House, 1½ stories, 10 rooms with porch, good condition. Barn in good condition. Acres in timber, 20. 100 acres tillable. Price, \$5,500. Terms, easy. Address Chas. Mann, agent, Middleburg, N. Y.

*No. 844—Farm of 20 acres, located 1 mile from Middleburg P. O. and railway station, on line of M. & S. Ry.; 1 mile from school, churches and butter factory. Highways, good. Surface of farm, comparatively level. Soil, loam. Acres in meadow, 20; acres tillable, 20. Fruit, 20 apple trees and small fruit. Adapted to any crops grown in this section. Fences, part fenced for 2,000 chickens. House, 22x30, good condition. Outbuildings: barn, 24x40; chicken-house, 12x20, good condition. Watered, house by 2 wells, barn by creek, fields by stream. Occupied by owner. Reason for selling, ill health of owner. Price, \$1,700. Terms, \$1,050 cash, balance on mortgage at 4%. Owner will include cow, chickens, incubator, farm wagon and tools. Address M. L. Tator, agent, Middleburg, N. Y.

*No. 845—Farm of 116 acres, located ¾ mile from Huntersland P. O., 5 miles from railway station at Middleburg, on line of M. & S. Ry., ¾ mile from school, churches and butter factory. Highways, good. Surface of farm level. Soil, loam. Acres in meadow, 76; in natural pasture, 20; in timber, 20, hemlock, etc. Acres tillable, 96. Fruit, 40 apple trees and considerable small fruit. Best adapted to oats, hay, buckwheat and hops. Fences, wire and board, good condition. House, 15 rooms, excellent condition. Outbuild-

ings: barn, 54x24; shed, 44x24, new hog pen, hophouse, etc. Watered, house and barn by well, fields by springs. Occupied by owner. Reason for selling, owner wishes to retire from business. Price, \$2,750. Terms, \$1,250 cash, balance at 5%. Address M. L. Tator, Middleburg, N. Y.

*No. 846—Farm of 130 acres, located 1½ miles from Middleburg P. O. and railway station, on line of M. & S. Ry.; 1½ miles from high school, churches and butter factory. Highways, good. Surface of farm level and rolling. Altitude, 900 feet. Soil, sandy loam. Acres in meadow, 25; in natural pasture, 15; in timber, 35. Acres tillable, 80. Fruit, 250 apple trees, 50 plum and cherry trees. Best adapted to grain, potatoes, vegetables, alfalfa, etc. Fences, wire, good. 2 houses, one, 12 rooms, good condition and one, 5 rooms, fair condition. Outbuildings: barn, 30x50 with basement, new, one 20x30, fair, two large hen-houses, etc. Watered, house by well, barns and fields by springs. Occupied by owner. Price, \$3,700. Terms, \$1,000 down, balance on mortgage. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

*No. 847—Farm of 98 acres, located 7 miles from railway station at Middleburg, on line of M. & S. Ry.; 600 feet from school. Adapted to general farming. Good soil. Good house and barn. Some timber. Price, \$1,400. Terms, \$600 down. Address Chas. Mann, agent, Middleburg, N. Y.

*No. 848—Farm of 5 acres, located 1½ miles from Middleburg P. O., R. D. 1 and railway station, on line of M. & S. R. R.; 1½ miles from school, churches, butter factory and milk station. Highways good. Surface of farm rolling. Altitude, 800 feet. Soil, loam. Acres tillable, 5. Fruit, apples, plums and cherries, about 40 trees. Fences, wire, good condition. House, 6 rooms, fair condition. Watered by well and spring. Occupied by tenant. Price, \$400. Terms easy. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

*No. 849—Farm of 18 acres, located 2½ miles from Middleburg P. O., R. D. 1 and railway station, on line of M. & S. Ry.; 1 mile from school and Protestant church, 1½ miles from butter

* Farm is in hands of agent or real estate dealer.



FIG. 18.—HOUSE ON FARM 836, TOWN OF MIDDLEBURG, SCHOHARIE COUNTY.

factory. Highways good. Surface of farm level and sloping. Altitude about 800 feet. Soil, loam. Acres tillable, 14. Best adapted to grain, corn, potatoes, etc. Fences in fair condition. House, 10 rooms, good condition. Outbuildings: barn, 30x50; fair condition. Watered by spring. Occupied by tenant. Reason for selling, owner has too much land. Price, \$600. Terms cash. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

*No. 850—Farm of 220 acres, located 2 miles from Huntersland P. O.; 6½ miles from railway station at Middleburg, on line of M. & S. Ry.; 1½ miles from school, church and butter factory. Highways, good. Surface of farm level and rolling. Soil, gravelly loam. Acres in meadow, 125; in natural pasture, 50; in timber, 45, mostly hard wood, some hemlock and pine. Acres tillable, 175. Fruit, 50 bearing apple trees, and different kinds of small fruit, plums, cherries and berries. Best adapted to oats, potatoes, hay, rye, and corn. Fences, stone and wire, good condition. House, large, 2 stories, 12 rooms. Outbuildings: barn, 36x48; shed, 36x20, all in fair repair. Watered by well, barn by trough, fields by spring. Unoccupied. Reason for selling, to close an estate. Price, \$2,150. Terms, \$1,150 cash, balance on mortgage at 5%. Address M. L. Tator, agent, Middleburg, N. Y.

*No. 851—Farm of 75 acres; located 3 miles from Middleburg P. O. and railway station, on line of M. & S. Ry.; ½ mile from school, 1 mile from church, 3 miles from butter factory. Highways good. Surface of farm level and rolling. Soil, gravelly loam. Acres in meadow, 55; in natural pasture, 10; in timber 10, second growth, enough hemlock to keep buildings in repair. Acres tillable, 55. Fruit, 15 apple trees, cherries and plums. Best adapted to potatoes, oats, hay, millet, corn and hops. Fences, stone and wire. House, large, 22x30, 11 rooms, good condition. Outbuildings: barn, 30x42; cow stable attached for 6 cows, wagonhouse, 24x36, hophouse, 24x36; hog pen, 15x12, corn crib, 10x12 and henhouse, 22x12. Watered, house by well and cistern, barns by trough, fields by springs. Occupied by owner. Reason for selling, advanced age and ill health of owner. Price, \$2,300. Terms, \$1,100

cash, balance on mortgage at 5% or might sell on contract of \$300 cash and \$50 per month until \$1,000 paid when deed will be given. Address M. L. Tator, agent, Middleburg, N. Y.

*No. 852—Farm of 8 acres; located 4 miles from railway station at Schoharie, on line of M. & S. Ry.; close to school and churches. Highways good. Surface of farm level. Soil, sandy loam. Fruit, large orchard, apples, pears, plums, peaches and cherries, also some berries. Best adapted to gardening. Fences, wire, good. House, 11 rooms with porch, first-class condition. Outbuildings: barn, 30x40; henhouse, 15x30. Watered by well. Occupied by owner. Price, \$2,700. Terms cash. Address Chas. Wehrstedt, agent, Middleburg, N. Y.

TOWN OF SEWARD

Population 1,419

No. 853—Farm of 100 acres; 3½ miles from Seward P. O., and railway station on line of D. & H. R. R.; R. D. 3½ miles from Seward, 6 miles from Cobleskill. Highways, good. Soil, mostly sandy loam, some clay. Acres in meadow, 40; tillable, 75; natural pasture, 15; timber, 10, beech, maple, basswood, oak, medium and small. Fruit, 40 apple, 5 pear and 5 plum trees. Best adapted to oats, corn, buckwheat, rye and grass. Fences, mostly post and wire. House, large, brick, with fireplaces, old style, in fair condition. Large barn, with horse stables and wagonhouse attached, in fair condition. Watered, house and barn, by well; fields, by durable springs. This farm would make a fine summer home. 6 miles from Sharon Springs. Reason for selling, owner no longer able to manage farm. Price, \$4,000. Terms, \$2,000 cash, balance on mortgage at 5%. Owner will rent on equal shares. Address H. T. Dana, Cobleskill, N. Y.

No. 854—Place of 4½ acres; 1 mile from Hyndsville P. O., R. D. 1, and railway station, on line of D. & H. R. R.; 3-minute walk to school; 1 mile from church and milk station. Nearest large village, Cobleskill, 5 miles distant, reached by rail and highway. Surface of farm level. Soil, clay and gravel. Fruit, apples, plums, pears and grapes.

* Farm is in hands of agent or real estate dealer.

Fences, wire, good condition. House, 20x30; with wing, 15x30, first-class condition. Outbuildings: barn, 20x25; woodhouse, 10x12; henhouse, 12x25; henhouse, 10x15; all in first-class condition. Watered by well. Occupied by owner. Reason for selling, death of wife of owner. Price, \$1,000. Terms, $\frac{1}{2}$ cash, balance on bond and mortgage. Owner will rent. Address Barney Vrooman, Hyndsville, N. Y.

No. 855—Farm of 24 acres; 1 mile from Dorloo P. O.; 2 miles from railway station at Seward, on line of D. & H. R. R.; 1 mile from school and church; 2 miles from milk station. Highways, good. Nearest large village, Cobleskill, 9 miles distant, reached by rail and highway. Surface of farm, mostly rolling, some level. Soil, clay and gravel. Acres in meadow, 12; in natural pasture, 3; in timber, 9; acres tillable, 15. Fruit, apples, pears, plums and berries. Best adapted to all kinds of grain and hops. Fences, board and wire, fair condition. House, 20x25; with wing, 15x20, fair condition. Outbuildings: barn, 20x30; hophouse, 25x30; henhouse in basement of barn; small woodhouse; hogpen; fair condition. Watered, house, by well; barns, by creek; fields, by springs. Occupied by tenant. Reason for selling, death of wife of owner. Price, \$900. Terms, $\frac{1}{2}$ cash, balance on bond and mortgage. Address Barney Vrooman, Hyndsville, N. Y.

TOWN OF SHARON

Population 1,825

No. 856—Farm of 120 acres; 2 miles from Sharon Springs; R. D. Soil, black loam and clay loam. 50 acres meadow; 30, pasture; 18, timber. Large house, in fair condition. Hophouse, 25x40, in good condition; barn needs repairs. Well and creek water. Fairly well fenced. Price, \$3,000. Address J. & A. Hatter, Canajoharie, N. Y.

No. 857—Farm of 200 acres; 5 miles from Sharon Springs; R. D. This farm keeps 8 horses, 18 head of cattle. Large house, 20 rooms, in fine condition. Large barns and other buildings, in good condition. Well watered. Fences, good. Price, \$6,000. Terms, $\frac{1}{2}$ cash, balance on easy terms. Owner will rent with option to buy. Name and address of owner, C. M. Onderdonk, Sharon Springs, N. Y., R. D. 2.

TOWN OF WRIGHT

Population 963

No. 858—Farm of 216 acres; 3 miles from Quaker Street P. O.; $3\frac{1}{4}$ miles from railway station on line of D. & H. R. R.; $\frac{1}{4}$ mile from school; 3 miles from churches; R. D. 1 from Central Bridge; $3\frac{3}{4}$ miles from creameries. Highways, somewhat hilly but good. Nearest large village, Schoharie, population 1,000, 6 miles distant, reached by highway. Occupied by tenant. Surface, mostly rolling and level, some side hills. Soil, clay loam and limestone. Acres in timber, 15, pine, oak and beech; acres tillable, 160. Fruit, about 150 apple trees, a few cherries and pears. Best adapted to hay, grain and rye. Fences, wire, stone and stump, poor condition. House, 15 rooms, good condition; telephone, in house. Large storage house for straw and baled hay, wagonhouse and barn, good condition. Watered by well and brook. Reason for selling, to settle estate. Fish pond could easily be constructed on this farm. Price, \$7,000, including stock and tools. Terms, \$3,000 down, balance on bond and mortgage. Address Eugene Hardin, 322 Manning Boulevard, Albany, N. Y. Owner will rent with option to buy.

No. 859—Farm of 120 acres; 3 miles from Schoharie P. O.; R. D. 1; 3 miles from railroad station at Schoharie, on line of M. & S. R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{4}$ miles from churches, Methodist and Reformed; $1\frac{1}{4}$ miles from butter factory; 3 miles from cheese factory; 7 miles from milk station. State roads and no hills. Nearest large village, Schoharie, population of 1,000, reached by highway. Surface, $\frac{1}{2}$ level, $\frac{1}{2}$ sloping to northeast. Altitude, about 700 feet. Soil, dark and yellow loam and lime. 36 acres meadow; 20 acres natural pasture; 30 acres timber, hemlock, pine, beech, oak, maple and red cedar. There are about 500 trees, quite large timber, and 200 sugar maples, large and medium size. 80 acres tillable. Fruit consists of 100 apple and a few plum, peach, cherry and grapes. Land best adapted to corn, hops, oats, rye and hay. Stone, board and wire fences, in fair condition. Two-story frame house, 30x24, 9 rooms, in good condition, partly new, with large porch. Two barns, 36x48, and 30x60, adjoining, 18 feet high; cow and

horse stable in 1 barn; up-to-date chicken- and hophouse, 24x60. Watered, house, by wells; barns by wells; fields, by springs and creek. Fox's Creek on one line; Warner's Lake, 9 miles distant. Occupied by owner. Reason for selling, advanced age of owner. Price, \$4,500, reasonable, part down. Will rent, on shares or cash rent, with option to buy; rental, \$200 and $\frac{1}{2}$ taxes. Address J. W. Taylor, Schoharie, N. Y., or S. F. Taylor, 306 Quail Street, Albany, N. Y.

*No. 860—Farm of 144 acres, located $1\frac{1}{2}$ miles from West Berne, 6 miles from railway station at Schoharie, 1 mile from school; $2\frac{1}{2}$ miles from churches, near butter factory. Good soil. Acres in timber, 25; acres tillable, 90. Fruit, young orchard, 200 trees. Fences, wire and board, good. House, 18 rooms, good. Outbuildings good. Good water at house and barn. Best adapted to alfalfa, corn, oats, wheat and potatoes. Price, \$5,800. Terms, \$2,500 down, balance easy. Address Chas. Mann, agent, Middleburg, N. Y.

SCHUYLER COUNTY

Area, 335 square miles. Population, 14,004. Annual precipitation, 36.99 inches. Annual mean temperature, 48.4°. Number of farms, 1,920. County seat, Watkins.

The county is situated in the south central part of the state. The lower part of Seneca Lake extends into this county. The surface is undulated with gentle inclination from each side to Seneca Lake and Kayuta Creek. Springs abound in every section of the county furnishing an abundant supply of pure water which finds its way to the lake through deep ravines which occur on either side along the shore. Near the lake the soil is very fertile, sandy and gravelly loam predominating, while clay loam prevails in the rest of the county. Natural gas is found in large quantities. In this county are located the largest salt producing plants in the world. The leading crops are reported as follows: corn, 134,500 bushels; oats, 291,237 bushels; wheat, 83,906 bushels; barley, 30,259 bushels; rye, 28,024 bushels; dry beans, 15,237 bushels; potatoes, 365,815 bushels; hay and forage, 44,344 tons. The total value of all farm property is \$9,263,801, an increase of 10 per cent. over the census of 1900. Domestic animals reported are dairy cows, 5,945; horses, 5,392; swine, 5,401; sheep, 22,982; poultry, 88,114; total production of milk, 3,222,190 gallons, which with the products of 5 milk stations and factories sold for \$174,342.

The county is intersected by the Northern Central, a part of the Pennsylvania system and branches of the Lehigh Valley and New York Central railroads. In this county is located the famous Watkins Glen State Park, which is visited by thousands of people annually, because of its wonderful beauty and attractive features. There are 105 district schools in the county and Cook Academy, one of the famous preparatory schools of the state, is located near Watkins. The county has 573 miles of improved highway and 10 miles of state and county roads. Most of the products of the county are sold in local markets, but Buffalo, New York, and Philadelphia furnish unlimited markets for the products of the county. Schuyler county lies in the fruit belt of the state where a good deal of attention is given to the cultivation of apples, pears, peaches, grapes and small fruits.

TOWN OF CATHARINE

Population 1,222

No. 861—Farm of 53 acres; 2 miles from Alpine P. O., R. D. 1, and 2 miles from railway station at Alpine, on line of L. V. R. R.; $\frac{1}{2}$ mile from school; 2 miles from churches; 1 mile from milk station. Highways, good. Nearest city, Elmira, population about 40,000, 18 miles distant, reached by rail and highway. Surface of farm, nearly level. Soil, loam. Acres in meadow, 30; in natural pasture, 20; in timber, 3, hemlock; acres tillable, 35. Fruit, apples

and pears. Best adapted to corn, oats, buckwheat and wheat. Fences, in poor condition. House, 9 rooms, fair condition. Outbuildings: barn, 30x40; wagonhouse and cow stables, 60x22. Watered, house and barn, by well; fields, by springs. Occupied by owner. Reason for selling, advanced age and poor health of owner. This farm is located 7 miles from Seneca Lake on a main road. Price, \$2,000. Terms, $\frac{1}{2}$ down, balance can run for 10 years. Address Arthur S. Brown, Alpine, N. Y., R. D. 1.

* Farm is in hands of agent or real estate dealer.

No. 862—Farm of 110 acres; $4\frac{1}{2}$ miles from Alpine P. O., R. D. 2; 5 miles from railway station at Odessa, on line of L. V. R. R.; 1 mile from school; 2 miles from churches; 5 miles from milk station. Highways, good. Nearest city, Ithaca, population about 15,000, 11 miles distant, reached by highway. Surface of farm, level and rolling. Soil, gravel and loam. Acres in meadow, 60; in natural pasture, 19; in timber, 30, hemlock, chestnut and hard wood; acres tillable, 80. Fruit, 60 apple trees, 4 pear and 3 plum trees. Best adapted to buckwheat, oats, barley and wheat. Fences, mostly stump and rail, good condition. House, 6 rooms, good condition. Outbuildings: barn, 32x44, gambrel roof, good condition; shed attached, 24x50, gambrel roof; horse and carriage barn, 32x44, good condition. Watered, house, by well; barn, by running water; fields, by stream. A small lake is $1\frac{1}{2}$ miles from farm. Occupied by tenant. Reason for selling, owner wants to retire. Price, \$3,000. Terms, $\frac{1}{2}$ down. Address Lewis W. Erway, Odessa, N. Y.

No. 863—Farm of 180 acres, located $1\frac{1}{2}$ miles from Alpine P. O., R. D. 3 and railway station, on line of L. V. R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{2}$ miles from Methodist church, butter factory and milk station. Highways good. Nearest city, Elmira, 16 miles distant, reached by rail and highway. Surface of farm, slightly rolling toward the south. Altitude about 600 feet. Soil, rich, sandy loam. Acres in meadow, 40; in natural pasture, 20; in timber, 50, second growth. Acres tillable, 110. Fruit, 40 apple and several plum and pear trees. Best adapted to potatoes, oats, buckwheat, rye and corn. Fences, rail, fair condition. House, large, 2 stories, 10 rooms, fine condition. Outbuildings, barn, 30x72, with basement; shed, 24x40, hen, hog and corn houses, all in good condition. Watered by well and springs. Occupied by owners. Reason for selling, to settle an estate. Price, \$3,200. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address Ralph D. Stoughton, Alpine, N. Y. Owner will rent with option to buy.

TOWN OF DIX

Population 3,625

No. 864—Farm of 70 acres, 6 miles from Watkins P. O., R. D. 3; 4 miles from railway station at Beaver Dams, on line of N. Y. C. R. R.; $\frac{1}{2}$ mile from

school, churches and grange hall; 4 miles from milk station. Highways, good. Nearest city, Elmira, population about 40,000, 15 miles distant, reached by highway and rail; village of Watkins, 5 miles distant. Surface, rolling and level. Altitude, about 1,200 feet. Soil, black and gray loam. Acres in meadow, 15; in natural pasture, 10; in timber, 5, maple and hemlock; acres tillable, 40. Fruit, 25 peach, 12 pear, 5 quince, 25 plum, 80 apple trees, grapes and 100 strawberry plants. Best adapted to corn, oats, potatoes, wheat, buckwheat, rye, etc. This is a good farm for the raising of fruit, especially cherries, as it is sheltered from the north winds. Fences, road and line fences, American wire. House, large, well built, excellent condition. Outbuildings, barn, 70x40, gambrel roof, in excellent condition, except roof. Watered, 2 springs piped to house and barn. Occupied by owner. Reason for selling, owner a widow, and cannot attend to farm. Price, \$5,000. Terms, $\frac{1}{2}$ cash, balance on bond and mortgage. Owner will rent. Address Mrs. Jennie M. Lockwood, Bethesda Sanitarium, Montour Falls, N. Y.

TOWN OF HECTOR

Population 3,514

No. 865—Farm of 80 acres; 1 mile from Hector P. O. and railway station, on line of L. V. R. R.; $\frac{1}{4}$ mile from school; $1\frac{1}{2}$ miles from Protestant church; R. D. 1 from Hector; 3 miles from creamery. Highways, good. Nearest large village, Watkins, population 3,000, 7 miles distant, reached by highway and Seneca Lake. Occupied by owner. Surface, fairly level, sloping to Seneca Lake. Soil, clay loam. Acres in meadow, 10; natural pasture, 6; timber, 6, maple, oak and hickory, good second growth; acres tillable, 60. Fruit, 4,000 peach trees, 100 plum trees, 200 cherry trees, apple and pear, 15 trees of each, 15 acres of grapes. Best adapted to all kinds of crops, especially fruit. The fruit crop for 1912 was 1,600 bushels of peaches, 10,000 baskets of grapes, besides a quantity of plums, cherries, pears and apples; new vineyard, one year old. Fences, mostly wire, in fair condition. House, 11 rooms, brick, large rooms, high ceiling, in fine condition; woodhouse; telephone in house. Outbuildings, barn, 36x60, with basement, in good condition; fruit-

house; icehouse; henhouse; garage. Watered, house, by well and cistern; barns, by running water; fields, by springs. Frontage on Seneca Lake, $\frac{1}{2}$ mile from house. Reason for selling, owner wishes to retire. For price and terms, address Eugene Erway, Hector, N. Y.

No. 866—Farm of 95 acres, located 2 miles from Valois P. O., R. D. 1, $1\frac{1}{2}$ miles from railway station at Valois, on line of L. V. R. R.; $1\frac{1}{2}$ miles from school; 2 miles from Methodist and Baptist churches. Highways, somewhat hilly but good. Nearest large village, Watkins, 12 miles distant, reached by rail and highway. Surface of farm, nearly level, gentle slope. Altitude about 1,400 feet. Soil, clay loam, good. Acres in meadow, 46; in timber, 15, hard wood. Acres tillable, 80. Best adapted to hay, buckwheat, corn, oats, etc. Fences, woven wire. House, 8 rooms, good condition. Outbuildings, barn, 30x40; barn, 26x36; barn, 24x48; horse barn, 20x30; wagonhouse, 20x30, and henhouse, all in good condition. Watered by well. Unoccupied. This farm is $1\frac{1}{2}$ miles from Seneca Lake. Reason for selling, owner lives too far away to attend to property. For price and terms, address Frank Lowe, Hector, N. Y.

No. 867—Farm of 65 acres, located 4 miles from Burdett P. O., R. D. 1, 4 miles from railway station at Burdett, on line of L. V. R. R.; $\frac{1}{4}$ mile from school; 2 miles from church, butter factory and milk station. Highways good. Nearest large village, Watkins, 7 miles distant, reached by highway. Surface of farm, level and rolling. Altitude 1,100 feet. Soil, gravelly. Acres in meadow, 20; in natural pasture, 5; in timber, 15, chestnut and oak. Acres tillable, 50. Fruit, apples, about 20 trees. Fences, wire and rail, fair condition. House, good size and in good condition. Outbuildings, main barn, 32x44, nearly new, shop and henhouse in good condition. Watered, house by well, barn by creek, fields by springs. Occupied by owner. Reason for selling, owner wants larger farm. Price, \$2,500. Terms, \$1,800 down, balance on long time. Address Andrew Coon, Burdett, N. Y., R. D. 1.

No. 868—Farm of 65 acres, located 1 mile from post office, 5 miles from railway station at Burdett, on line of L. V. R. R.; 1 mile from school and Methodist church; 3 miles from milk station. Highways in fair condition. Altitude, 1,000 ft. Soil, gravelly loam. Acres in meadow, 10; in natural pasture, 10; in timber, 15, chestnut and oak. Acres tillable, 30. Fruit, 25 apple, 2 pear trees and some cherries. Best adapted to oats, wheat, corn, potatoes, beans and buckwheat. Fences, rail and stump, poor condition. House, 10 rooms, good condition. Outbuildings, barn, 30x40, with straw shed attached; barn with basement, good condition. Watered, house by well, barn by spring, fields by spring. Reason for selling, ill health of owner. Price, \$1,600. Terms cash. Address Leroy Welch, Burdett, N. Y.

No. 869—Farm of 160 acres, located 4 miles from Burdett P. O., R. D. 2, 4 miles from railway station at Burdett or Odessa, on line of L. V. R. R.; $\frac{1}{5}$ mile from school; $2\frac{1}{2}$ miles from Protestant church and butter factory; 4 miles from milk station. Highways, somewhat hilly but good. Nearest large village, Watkins, 4 miles distant, reached by highway. Surface of farm nearly level, a little side hill. Altitude about 1,600 feet. Soil, good clay loam. Acres in meadow, 50; in natural pasture, 17; in timber, 27. Acres tillable, 130. Fruit, 25 apple trees, also a few cherries and plums. Best adapted to hay, corn, barley, oats, buckwheat, rye, beans and potatoes. Fences, woven wire and rail, good condition. House, large, 14 rooms, cement cellar. Outbuildings, barn, 30x40, with basement; shed, 20x50; shed, 32x50; hoghouse, 12x20; henhouse, 10x12; tool shed, 18x30, woodhouse and blacksmith shop. Watered, house by well, barns by running water, fields by springs. Occupied by owner. Reason for selling, ill health. Price, \$7,000. Terms, $\frac{1}{2}$ cash, balance on mortgage. There is a good tenant house of 7 rooms, good condition, 20 rods from main house. Address T. R. & Stephen Kellogg, Burdett, N. Y.

*No. 870—Farm of 124 acres, located $1\frac{1}{4}$ miles from Hector P. O., R. D. 1 and railway station, on line of L. V. R. R.; $\frac{1}{4}$ mile from school; $1\frac{1}{4}$ miles from

* Farm is in hands of agent or real estate dealer.

churches; 2 miles from butter factory. Highways in fair condition. Nearest large village, Watkins, 8 miles distant, reached by rail and highway. Surface of farm little rolling. Altitude about 500 feet. Soil, part gravel and part loam. Acres in meadow, 30; in natural pasture, 10; in timber, 10, oak, hickory, ash and pine. Acres tillable, 114. Fruit, about 4 acres of apple orchard. Best adapted to grass, oats, hay, potatoes, barley, wheat and corn. Fences, wires and rail, good condition. House, large, good condition, also good tenant house. Outbuildings, shed, 30x50, hen-house, 12x16, new; cornhouse, 12x16; new smokehouse; wagonhouse; tool-house; hoghouse, etc. Watered, house by well, barns by running water, fields by spring. This farm is 1 mile from Seneca Lake. Occupied by tenant. Reason for selling, to close an estate. Price, \$7,000. Terms, $\frac{1}{2}$ down. Address J. D. Mallory, agent, Hector, N. Y.

TOWN OF MONTOUR

Population 1,608

No. 871—Farm of 32 acres; $1\frac{1}{2}$ miles from Montour Falls P. O., R. D. 1, and railroad station, on line of the Penn. R. R.; 1 mile from school; $1\frac{1}{2}$ miles from Protestant churches and milk station. Highways, good. Nearest village, Montour Falls, population 1,200, $1\frac{1}{2}$ miles distant, by highway and trolley. Surface, $\frac{1}{2}$ level and $\frac{1}{2}$ rolling, excellent locality for fruit growing and poultry raising. Soil, gravelly loam. Acres tillable, 32. Fruit, 6 cherry, 8 pear, 40 apple trees, all standard varieties. Land adapted to all crops. Fences, mostly wire. Seven-room house. Barn, 30x40. House and barn, watered from well; fields, by springs. Seneca Lake is 4 miles distant, reached by macadam road and trolley. Montour Falls, near this farm, is a thriving manufacturing town, with 3 large manufacturing factories, high schools and academy. Occupied by owner. Reason for selling, owner has 2 other farms. Price, \$1,800. Terms, \$1,000 down, mortgage for balance. Address Chas. L. Doolittle, Montour Falls, N. Y., R. D. 1.

No. 872—Farm of about 20 acres, $\frac{1}{2}$ mile from Montour Falls P. O., R. D. 1; $\frac{1}{2}$ mile from railway station at Montour Falls, on line of N. C. R. R.; $\frac{1}{2}$ mile from school and churches. Highways, somewhat hilly but good. Near-

est large villages, Montour Falls and Watkins, population 1,200 and 3,000 respectively. Watkins 3 miles distant, reached by rail and highway. Surface of farm, rolling. Altitude, about 200 feet. Soil, clay and sandy loam. Acres in natural pasture, 2; in timber, 4, pine, chestnut and poplar; acres tillable, 15. Fruit, cherries, pears and apples, about 40 trees. House, 11 rooms, hot water heat, hot and cold water, bath, good condition. Barn, 30x40, good condition. Watered, house, by running spring. Reason for selling, poor health of owner. Price, \$3,800. Terms, \$1,000 down, balance to suit purchaser. Address Cornelia E. L. Bausch, 105 W. Gray Street, Elmira, N. Y.

No. 873—Farm of 105 acres, located 2 miles from Montour Falls P. O. and railway station, on line of Northern Central R. R.; 1 mile from school; 2 miles from churches. Highways, somewhat hilly but good. Surface of farm rolling. Soil, sand and gravel. Acres in meadow, 14; in natural pasture, 20; in timber, 35, oak, hickory, walnut, pine, chestnut, basswood, etc. Acres tillable, 70. Fruit, apples, peaches, plums and grapes. Fences, wire and rail, poor condition. House, 24x32, wing, 15x24, 2 stories, 11 rooms. Outbuildings, a good barn, 42x48, chicken coop, etc. Watered, house by well, barns by creek, fields by springs. Reason for selling, owner lives too far away to look after farm. Price, \$4,000. Terms, $\frac{1}{2}$ down, remainder on mortgage. Address Jos. A. Fitzpatrick, 506 Baldwin Street, Elmira, N. Y. Owner will rent for cash or on shares.

No. 874—Farm of 80 acres, located 1 mile from P. O. and 1 mile from railway station, on line of Northern Central R. R.; 1 mile from school; $1\frac{1}{2}$ miles from churches and milk station; $\frac{1}{4}$ mile from butter factory. Highways a little rolling. Surface of farm comparatively level. Soil, gravelly. Acres in meadow, 4; in natural pasture, 5. Acres tillable, 70. Fruit, cherries, plums, pears. Best adapted to wheat, rye, oats, buckwheat, corn and beans. Fences, mostly wire, fair condition. House, 2 stories, 8 rooms, good condition. Outbuildings, cornhouse, 14x25; barn, 30x50, good condition, and 2 sheds in fair condition. Watered, house and barn by well, fields by springs. House unoccupied. Price,

\$3,000. Terms, \$2,000 down, balance on mortgage at 6%. Address Mrs. Alice Drake, Montour Falls, N. Y. Owner will rent.

TOWN OF ORANGE

Population 1,087

No. 875—Farm of 52 acres; 6 miles from Beaver Dams; R. D.; 1 mile from the village of Monterey; 60 rods from school. State road from Coopers Plains to Watkins, when completed, will pass farm. This is a valley farm in good

state of cultivation. House, upright and two wings, in good condition. Telephone passes house, rental of which is \$1 per month. Buildings insured for \$800. Outbuildings, barn, shed and wagonhouse. Watered by creek and well. Fences, woven wire. This farm is now rented at \$100 per year and the school tax but possession will be given April 1 of any year, if sold previous to March 1. Price, \$1,500. Terms, \$650 cash, balance on time. Address L. B. Webb, Watkins, N. Y., R. D. 2.

SENECA COUNTY

Area, 346 square miles. Population, 26,972. Annual precipitation, 39.55 inches. Annual mean temperature, 49.1°. Number of farms, 2,085. County seat, Waterloo.

This county lies in the central part of the state between Seneca and Cayuga Lakes.

The greater part of the surface is undulating and elevated. In the northern part the surface is level with the fertile sandy loam found in all sections of the "great level." The surface rises toward the south in gentle rolls to an elevation of about 800 feet in the extreme southern part. In the central portion of the county is found a dark loam with clay subsoil, while in the southern part clay loam predominates. Gypsum and limestone are found in the county. The crop reports show corn, 334,218 bushels; potatoes, 290,310 bushels; oats, 649,066 bushels; wheat, 331,822 bushels; buckwheat, 117,492 bushels; barley, 55,574 bushels; dry beans, 23,589 bushels; hay and forage, 59,724 tons. The total value of all farm property is \$14,589,014, being an increase of 32 per cent. over 1900. Domestic animals reported: Dairy cows, 7,429; horses, 7,879; swine, 9,832; sheep, 15,304; poultry, 128,791; production of milk, 3,607,915 gallons valued at \$224,120.

The N. Y. C. & H. R. R. and two branches of the Lehigh Valley railroad intersect the county. In the northern part of the county an electric line passes through Seneca Falls. The Willard Insane Asylum with large and costly buildings are located at Ovid. Flour mills, malt houses and distilleries are located at Waterloo. The system of education is of the same high character demanded by the state and the needs of the rural sections are fully met by 91 district schools conveniently located. The county has 31 miles of state and county roads and 413 miles of improved highways. The agricultural organizations consist of one Pomona grange, 11 subordinate granges, county agricultural society and county beekeepers society. Seneca county is famed like many other of New York counties for the beauty of its scenery.

TOWN OF COVERT

Population 1,947

No. 876—Farm of 98 acres, located 2½ miles from Interlaken P. O., R. D. 2 and railway station, on line of L. V. R. R.; ½ mile from school; 2½ miles from butter factory, milk station, Catholic and Protestant churches. Highways good. Nearest city, Ithaca, 17½ miles distant, population about 15,000, reached by rail or highway. Surface of farm level. Soil, good, dark brown. Acres in meadow, 25; in natural pasture, 10. Acres tillable, 75. Fences, mostly wire, fair condition. House, 9 rooms, good size. Outbuildings in good condition. Watered, house and barn by well. Oc-

cupied by tenant. Price, \$85 per acre. Terms cash. Address Mrs. Clarence Slught, Rochester, N. Y.

TOWN OF FAYETTE

Population 2,593

*No. 877—Farm of 70 acres; 5 miles from Waterloo P. O.; R. D. 2; 2 miles from railway station at McDougal, on line of L. V. R. R.; ¾ mile from school; 5 miles from churches. Highways, good. nearly level. Surface, gently sloping, fine drainage. Altitude, 600 feet. Soil, black and brown loam. Acres in meadow, 30; in natural pasture, 5; acres tillable, 60. Fruit, apples and pears. Best adapted to hay, grain, corn

* Farm is in hands of agent or real estate dealer.

and potatoes. Fences, mostly wire, good condition. House, 8 rooms, good condition. Outbuildings, horse and cow barn, 24x40; grain barn, 24x36; hay barn, 34x42; wagonshed, 16x24; henhouse; hogpen, etc. Watered by well. Seneca Lake, 3 miles from farm; Seneca River, 4 miles. Occupied by owner. Reason for selling, owner a widow and cannot attend to farm. Price, \$4,500. Terms, \$1,000 or more cash, balance on time. Address E. W. Dowden, agent, 22 E. Main St., Waterloo, N. Y.

*No. 878—Farm of 19 acres; 3 miles from Waterloo P. O., R. D. 2, and station, on line of the N. Y. C. & H. R. R.; $\frac{3}{4}$ mile from school; 3 miles from churches of several denominations. Highways, good. Nearest village, Waterloo, population of 4,500, distant 3 miles by highway. Surface, rolling, part, nearly level. Altitude, about 600 feet. Soil, heavy dark loam. Six or 8 acres of meadow; 15 acres tillable. Fruit consists of 2 to 3 acres of apple trees; also some other fruits. Land is adapted to hay, grain, corn, potatoes, etc. Fences, wire, in good shape. Seven-room frame house, in good condition. Barns of moderate size, in good condition. House, watered by well; barn, by well. Seneca River, $2\frac{1}{2}$ miles distant; Seneca Lake, $3\frac{1}{2}$ miles. Occupied by owner. Reason for selling, owner wants larger farm. Price, \$2,000. Terms, cash or part cash. Address E. W. Dowden, agent, Waterloo, N. Y.

*No. 879—Farm of 100 acres, located 3 miles from Waterloo P. O., R. D. 2 and railway station, on line of N. Y. C. & L. V. R. R.; 1 mile from school; 3 miles from Catholic and Protestant churches. Highways in good condition. Surface of farm nearly level. Altitude 560 ft. Soil, good, heavy loam. All tillable. Fruit, $1\frac{1}{2}$ acres of apple orchard. Best adapted to, hay, grain, corn and potatoes. Fences, wire, fair condition. House, 10 rooms, good condition. Outbuildings, good barns, main barn about 30x60. Watered, house and barn by well. Occupied by tenant. Reason for selling, owner lives in town and cannot look after farm. Price, \$8,000. Terms, \$2,000 down. Address E. W. Dowden, agent, Waterloo, N. Y.

*No. 880—Farm of 103 acres, located 5 miles from Waterloo P. O., $3\frac{1}{2}$ miles

from railway station at McDougall, on line of L. V. R. R.; 1 mile from school; $3\frac{1}{2}$ miles from churches and milk station. Highways in good condition. Surface of farm, nearly level. Altitude 600 feet. Soil, fine, dark loam. Acres in meadow, 40; acres tillable, 85. A small amount of fruit. Best adapted to hay, corn, wheat, oats and potatoes. Fences, wire, fair condition. House, 7 rooms, needs repairs. Outbuildings, main barn, 30x60, poor condition; cow barn, 20x50, good condition; toolshed, 18x24, fair condition. Watered, house and barn by well, fields by spring. Occupied by tenant. Reason for selling, to close an estate. Price, \$6,180. Terms, $\frac{2}{3}$ cash, balance on mortgage. Address E. W. Dowden, agent, Waterloo, N. Y.

TOWN OF JUNIUS

Population 957

No. 881—Farm of 102 acres, located 10 miles from Clyde P. O., R. D. 4, 2 miles from railway station at Thompson, on line of Fall Brook R. R.; 1 mile from school; $1\frac{1}{2}$ miles from Presbyterian church; 6 miles from butter factory and cheese factory; 4 miles from milk station. Highways, gravel and good. Nearest large village, Lyons, 6 miles distant, reached by highway. Surface of farm rolling. Soil, sandy loam. Acres in meadow, 20; in timber, 13, oak and soft maple. Acres tillable, 89. Fruit, 125 apple trees and other small fruit. Best adapted to oats, rye, wheat, potatoes and cabbage. Fences, wire, fair condition. House, 8 rooms, fair condition. Outbuildings, main barn, 32x40; wagon and tool shed, 16x40; hoghouse and henhouse, fair condition. Watered, house by well, barn and fields by spring. Occupied by tenant. Reason for selling, owner has another farm of 300 acres. Price, \$4,000. Terms, $\frac{1}{2}$ cash. Address Wm. H. Kelly, Clyde, N. Y., R. D. 4.

TOWN OF LODI

Population 1,408

No. 882—Farm of 107 acres; 3 miles from Caywood P. O. and railway station, on line of L. V. R. R.; $\frac{3}{4}$ mile from school; $1\frac{1}{2}$ miles from churches; 3 miles from butter factory. Highways, good. Nearest village, Lodi, population, 600, 4 miles distant, reached by highway. Surface, rolling. Soil, clay. Acres in

* Farm is in hands of agent or real estate dealer.

meadow, 50; in natural pasture, 12; in timber, 8, pine and oak, medium size; acres tillable, 95. Fifty apple trees, some pear and plum trees. Best adapted to wheat, corn, oats, buckwheat and hay. Large old-fashioned house, in good condition. Three barns, in good condition. Watered, house and barn by well; fields, by springs and creeks. 3 miles from Seneca Lake. Occupied by tenant; can give possession at once. Reason for selling, owner has too much other business. Price, \$35 per acre. Terms, \$500 to \$1,000 down, balance on easy terms at 5%. Can divide this farm, giving house, 2 barns and timber, about 50 acres, at \$40 per acre; terms 4% interest on deferred payments. Address Chas. S. Farr, Lodi, Seneca Co., N. Y.

No. 883—Farm of 65 acres; $2\frac{1}{2}$ miles from Caywood P. O. and railway station, on line of L. V. R. R.; $\frac{1}{2}$ mile from school; 2 miles from churches; 4 miles from butter factory and milk station. Highways, good. Nearest village, Lodi, population 600, 4 miles distant, reached by highway. Surface, gently rolling. Soil, clay loam. Acres in meadow, 30; in natural pasture, 6; in timber, 6; acres tillable, 59. A few apple trees. Best adapted to wheat, corn, oats, buckwheat and hay. Good line fences. House, 6 rooms, in good condition. Large basement barn, 32x70. Watered, house, by 2 wells; living spring in barnyard. $2\frac{1}{2}$ miles from Seneca Lake. Occupied by tenant. Reason for selling, owner has too much other business. Price, \$2,500. Terms, \$500 to \$1,000 down, balance to suit at 4%. Address Chas. S. Farr, Lodi, Seneca Co., N. Y.

No. 884—Farm of 90 acres, located $\frac{1}{2}$ mile from Lodi P. O., R. D. 1, 2 miles from railway station at Lodi, on line of L. V. R. R.; $\frac{1}{2}$ mile from school, churches and butter factory. Highways good. Nearest city, Geneva, 20 miles distant, population about 18,000, reached by rail and highway. Surface of farm, slightly rolling. Soil, clay loam. Acres in meadow, 30; in natural pasture, 10; in timber, 6, pine, hemlock, beech and maple. Acres tillable, 75. Fruit, 2 orchards of about 100 apple trees, also a few cherries, plums, etc. Best adapted to wheat, oats, corn, barley, beans, alfalfa and cabbage. Fences, new woven wire. House, 8 rooms, fair condition.

Outbuildings, barn, 30x50; wagonhouse, hay and horse barn, 28x70, new; basement barn, 2 sheds, hogpen and henhouse. Watered, house by well and cistern, barn by well and creek, fields by creek and spring. Occupied by tenant. Reason for selling, ill health of owner. Price, \$9,000. Terms, \$1,000 down, balance at 5%. Address Chas. S. Farr, Lodi, N. Y.

No. 885—Farm of 93 acres, located $2\frac{1}{2}$ miles from Lodi P. O., R. D. 1, 1 mile from railway station at Lodi, on line of L. V. R. R.; 1 mile from school; $2\frac{1}{2}$ miles from churches, butter factory and milk station. Highways good. Nearest city, Geneva, 20 miles distant, reached by rail and boat. Surface of farm, level. Soil, good. Acres in meadow, 30; in natural pasture, 15; in timber, 15, oak, hemlock and hickory. Acres tillable, 60. Fruit, apples, peaches, pears, plums, cherries, currants and berries. Best adapted to wheat, oats, barley and corn. Fences, wire and rail, fair condition. House, large, good condition. Outbuildings, good wagonhouse, hoghouse, chickenhouse; large barn, 66x32; new buildings, 18x30; woodsheds, etc. Watered, house by well and cistern, barn and fields by stream. Seneca Lake is one mile from farm. Occupied by tenant. Reason for selling, owner has too much other business. Price, \$100 per acre. Terms, $\frac{1}{2}$ down, balance on mortgage. Address Dr. J. T. Owen, Lodi, N. Y.

TOWN OF SENECA FALLS

Population 7,407

No. 886—Farm of 160 acres; 2 miles from Seneca Falls P. O.; 2 miles from railway station at Seneca Falls; 2 miles from school, 7 churches of all denominations and milk station. Highways, good; new State road to be built. Nearest large village, Seneca Falls, population 7,000, 2 miles distant, reached by highway. Surface of farm, level, slightly rolling. Soil, sandy loam. Acres in meadow, 60; in natural pasture, 10; in timber, 18, elm, maple and ash, very little large timber; acres tillable, 135. Fruit, 40 apple and 5 pear trees. Best adapted to all kinds of grain and hay. Fences, about 400 rods of smooth wire, balance, barbed wire, in good condition. House, old-fashioned farm house, 14 rooms, used for two families. Barn, 40x

40; cow barn, 18x40; farm shop; foundation built for barn, 36x64. Watered, house and barn, by well; fields, by springs and brook. 3 miles from Cayuga Lake; 2 miles from Seneca River. A good dairy farm. Sand and gravel bank on farm. Occupied by tenant. Reason for selling, owner wishes to move to city. Price, \$60 per acre. Terms, \$1,000 down. Owner will rent with option to buy. Address Lillian R. Arnold, 43 Clinton St., Seneca Falls, N. Y.

TOWN OF WATERLOO

Population 4,429

*No. 887—Farm of 152 acres; 5 miles from Waterloo P. O., R. D. 3; $1\frac{3}{4}$ miles from railway station at W. Junius, on line of Pennsylvania Branch of the N. Y. C. R. R.; $\frac{3}{4}$ mile from school; $2\frac{1}{2}$ miles from churches. Highways, nearly level, fine. Nearest city, Geneva, $5\frac{1}{2}$ miles distant, population about 12,000, reached by highway. Surface, nearly level but rolling in parts. Altitude, about 500 feet. Soil, dark brown loam, drained by tiles and open ditch. Adapted to general crops. Acres in meadow, 40; in timber, 15, chestnut, beech, birch, hickory and cherry; acres tillable, 130. Fruit, about 170 trees, apples, peaches, pears and plums, also 1,600 peach trees set in Spring of 1912. Watered by 3 wells and springs. Fine house, 14 rooms, hardwood finish, splendid cellars, slate roof. Outbuildings: basement barn, 32x100; straw shed, 30x48, attached; wagonhouse, 30x40. Reason for selling, owner wants smaller farm. Price, \$60 per acre. Price subject to change owing to improvements in progress. Terms, part cash, remainder could stand at 5%. Address E. W. Dowden, agent, Waterloo, N. Y.

*No. 888—Farm of 120 acres, located $2\frac{1}{2}$ miles from Waterloo P. O., $1\frac{1}{2}$ miles from school; $2\frac{1}{2}$ miles from several churches. Surface of farm, rolling and level. Highways level. Soil, about 25 acres of fine black muck, partly worked and partly pasture; balance good loam, wood lot of several acres, fair amount of fruit. House, good size, good condition. Outbuildings, barn about 30x40,

with shed attached, rather poor condition. Price, \$3,800. Terms, cash or mostly cash. Address E. W. Dowden, agent, Waterloo, N. Y.

*No. 889—Farm of 195 acres, located 1 mile from Waterloo P. O., R. D. 3 and railway station, on line of N. Y. C. & L. V. R. R.; 1 mile from school and several churches. Highways level. Soil, mostly sandy with a little clay in one or two fields. Surface, gently sloping. A fine creek crosses the farm, draining into Seneca River a few rods from farm. Best adapted to potatoes, corn, oats, rye, cabbage, squash, etc. Fruit, a small, old orchard and a larger orchard of young bearing trees. Some wood. This place would cut up nicely into small farms owing to its location on trolley near town and facing on three roads with nice frontage on each. House, 8 rooms, gas and furnace, good condition. Outbuildings, horse, hay and grain barn, cow shed, tool shed and henhouse. Fences, wire, good condition. Price, \$12,675. Terms, \$8,675 down, balance on mortgage at 5%. Address E. W. Dowden, agent, Waterloo, N. Y.

*No. 890—Farm of 152 acres, located 5 miles from Waterloo P. O., R. D. 3, 2 miles from W. Junius railway station, on line of N. Y. C. R. R.; 1 mile from school; $2\frac{1}{2}$ miles from churches. Highways nearly level. Nearest city, Geneva, $5\frac{1}{2}$ miles distant, reached by rail and highway. The farm is gently rolling, is drained by open ditches and tiling. Soil, partly brown loam, part black sandy loam and part a lighter sandy soil. Best adapted for fruits, grains, cabbage, potatoes, etc. Fruit, new peach orchard of about 1,600 trees set in Spring of 1912, about a hundred pear, peach and apple trees in bearing. Fifteen acres of woods, chestnut, maple, beech, etc. House, 14 rooms. Outbuildings, basement barn, 30x100; large straw shed; carriage and tool house, shop. Watered by wells and spring. Fences in fair condition, some new. Price, \$9,120. Terms, part cash. Address E. W. Dowden, agent Waterloo, N. Y.

* Farm is in hands of agent or real estate dealer.

STEUBEN COUNTY

Area, 1,490 square miles. Population, 83,363. Annual precipitation, 34.97 inches. Annual mean temperature, 49.1°. Number of farms, 7,363. County seat, Bath.

This county is situated in the southwestern part of the state bordering on Pennsylvania. It is drained by the Canisteo, Conhocton and Tioga Rivers, which unite in the southeastern part of the county and form the Chemung River. Cayuga Lake forms part of its northeast boundary.

The surface is an undulating table land diversified with broad irregular hills and deep valleys. A chain of low hills extends on both sides of the valleys of the Conhocton and Canisteo Rivers and extends across the county from the northeast to the southwest. Between these elevations is a wide fertile valley. The soil on the uplands is a deep gravelly loam, while clay loam is found in the valleys and in the eastern half of the county with a subsoil of clay and lime. In the southeast corner a black loam soil is found in the valleys. Woodlands of oak, ash, pine, sugar maple, beech, chestnut and other trees cover nearly one-third of the entire area. Excellent building stone is found in the Devonian sandstone outcroppings. The county ranks first in the production of honey, second in buckwheat and fourth in sugar. Some of the principal crops are corn, 228,411 bushels; oats, 1,216,138 bushels; wheat, 168,160 bushels; buckwheat, 341,264 bushels; rye, 71,102 bushels; potatoes, 3,279,953 bushels; hay and forage, 189,482 tons. The value of all farm property is \$37,369,643, an increase of 14 per cent. since 1900. The general advance in price of New York State farms is just beginning to reach this county and the next ten years will undoubtedly mark a very decided increase. Domestic animals are reported as dairy cows, 37,599; horses, 20,506; swine, 17,740; sheep, 53,161; poultry, 296,172; production of milk, 16,430,763 gallons; this included with the products of 42 milk stations and factories in the county sold for \$1,325,568.

There are 45 miles of state and county roads and 2,862 miles of graded and improved roads, and 369 district schools with many standard high schools provide the means of education for the farmers' children. Several trunk lines intersect the county making the transportation facilities excellent and ample. The New York State Soldiers Home is located at Bath. Corning, known as the Crystal City, is the site of extensive glass works. Hornell is a leading railroad town where many important manufactories are located. There are 38 agricultural societies in the county serving the best interests of the farmer.

TOWN OF ADDISON

Population 2,509

*No. 891—Farm of 80 acres, located $3\frac{1}{2}$ miles from Addison P. O. and railway station, on line of Erie R. R.; 1 mile from school; $3\frac{1}{2}$ miles from churches and milk station; $1\frac{3}{4}$ miles from cheese factory. Highways good. Surface of farm, mostly level. Altitude about 1,200 ft. Soil, gravel loam. Acres in meadow, 3; in natural pasture and timber, 35, pine and hemlock. Acres tillable, 45. Fruit, 50 apple, 2 pear and 5 cherry trees, also berries. Best adapted to general farming and dairying. Fences in good condition. House, 2 stories, 8 rooms, fair condition. Outbuildings, barn, 18x32, lumber on ground to build new barn, 40x45. Watered, house and barn by well, fields by spring. Unoccupied. Reason for selling, other business. Price, \$2,800. Terms, \$1,600 cash, balance \$200 per year, 6%. Address V. A. Mann, agent, Addison, N. Y.

*No. 892—Farm of 168 acres, located $3\frac{3}{4}$ miles from Rathbone P. O. and railway station, on line of Erie R. R.; $\frac{3}{4}$ mile from school; 2 miles from churches and cheese factory; $3\frac{3}{4}$ miles from milk station. Highways good. Surface of farm rolling. Altitude about 1,200 ft. Soil, gravel loam, good. Acres in meadow, 83; in natural pasture, 30; in timber, 50, pine and hemlock. Acres tillable, 83. Fruit, 65 apple trees. Best adapted to hay, grain, corn and potatoes. Fence, wire and stump, good. House, 2 stories, 20 rooms, first-class condition. Outbuilding, barn, 36x40; horse barn, 24x32; shed, 24x64; shed, 16x24; shed, 16x32; shed, 14x16; tool house, 16x32; boat house, 12x20; ice-house, dance hall and store, also cottage, 3 rooms. Watered, house and barns by running water, fields by lake and springs. Lake of 35 acres included in the 168 acres. Occupied by owner. Reason for selling, owner has other business. Price, \$7,000. Terms, arranged

* Farm is in hands of agent or real estate dealer.

at time of sale. Five good row boats included. Address V. A. Mann, agent, Addison, N. Y.

TOWN OF BATH
Population 8,554

No. 893—Farm of 41½ acres; 3½ miles from Bath P. O.; 3½ miles from Bath railway station; 4½ miles from Savona railway station; ¾ mile from school. Soil, yellow loam and gravel soil. Acres in meadow, 29; acres pasture, 7; acres timber, 5½. House, 12x16, with wing, 8x12, not in very good condition. Barn and addition, 20x30, with shed and stable. Watered by spring and cistern. Timber land comprises a fine, thrifty grove of young white or cork pine; also from 5,000 to 8,000 feet of large sawing pine. Fences, pole and rail, in fair condition. Price, \$850. Terms, ¼ down, balance to suit purchaser. Owner will rent with option to buy. Name and address of owner, John H. Bowlby, Bath, N. Y.

No. 894—Farm of 90 acres, located 5 miles from Kanona P. O. and railway station, on line of D. L. & W. and Erie R. R.; ¼ mile from school; 5 miles from Protestant churches; 7 miles from churches of all denominations; 1½ miles from cheese factory; 5 miles from milk station. Nearest large village, Bath, 6 miles distant, reached by highway. Surface of farm, mostly rolling, part level. Altitude 1,300 ft. Acres in meadow, 15; in natural pasture, 30. Acres tillable, 80. Best adapted to wheat, potatoes and oats. Fences, line fences wire. No house. Outbuildings, barn, 30x40, fair condition. Campbell Creek runs through farm. Occupied by tenant. Reason for selling, owner lives too far away to attend to farm. Price, \$1,200. Terms, \$300 down, balance \$50 per year. Address James McCall, Bath, N. Y.

TOWN OF BRADFORD
Population 613

*No. 895—Farm of 103 acres, located 3½ miles from Bradford P. O., R. D. 3, 7 miles from railway station at Savona, on line of D. L. & W. & Erie R. R., 1 mile from school; 3½ miles from Protestant churches; 7 miles from milk condensing plant, cream wagon passes door. Highways good. Nearest city, Corning, 16 miles distant, reached by highway.

Surface of farm rolling. Soil, clay loam. Acres in meadow, 40; in natural pasture, 40; in timber, 12, hard wood. Acres tillable, 85. Best adapted to oats, buckwheat, rye and potatoes. Fences in fair condition. House, good condition. Outbuildings, barns in fair condition, 2 sheds. Watered, house and barn by well, fields by springs. Unoccupied. Reason for selling, advanced age of owner who lives too far away to attend to place. Price, \$3,500. Terms, ½ down. Address H. P. Zimmerman, agent, Savona, N. Y., R. D. 1.

TOWN OF CAMERON
Population 1,066

*No. 896—Farm of 140 acres; 5 miles from Cameron Mills P. O., R. D. 2, and railway station, on line of Erie R. R.; ½ mile from school, churches and cheese factory. Highways, somewhat hilly. Nearest city, Hornell, 18 miles distant; Corning, 20 miles distant, reached by rail. Surface, hilly. Soil, good. Acres in meadow, 45; in natural pasture, 20; in timber, 20, maple and beech; acres tillable, 100. 50 apple trees and 5 cherry trees. Best adapted to hay, oats, potatoes, corn, dairying and sheep raising. Fences, board and wire, in good condition. Large house, painted white, well built, needs slight repairs to roof and porch. 1 large barn, 2 sheds and straw house attached; dry yard, east exposure; horse and wagon barn; horse and cow barn; hog and corn house. Watered by well; fields, by springs and stream. House is protected from west winds by woods a few rods distant. Reason for selling, to settle estate. Price, \$25 per acre. Terms, ½ cash, balance on time to suit purchaser. Address M. R. Sanford, 1029 Madison St., Syracuse, N. Y. Owner will rent.

TOWN OF CAMPBELL
Population 1,204

No. 897—Farm of 80 acres; 3 miles from Campbell P. O., and railway station, on line of Erie R. R. & D. L. & W. R. R.; 3 miles from school, churches and butter factory. Highways, hilly. Nearest city, Corning, population 14,000, 10 miles distant. Surface, rolling. Soil, gravelly. Acres in meadow, 40; some timber, pine and chestnut. Fruit, apples. Best adapted to corn, potatoes,

* Farm is in hands of agent or real estate dealer.

oats and buckwheat. Fences, poor. No house. Fair-sized barn. Watered by well. Unoccupied. Reason for selling, owner has other business. Price, \$1,000. Terms, \$200 down, balance \$150 each year. Owner will rent on shares or for 1 year with option to buy. Address Geo. R. Sutherland, Campbell, N. Y.

No. 898—Farm of 242 acres; 1/3 mile from Curtis P. O. and railway station, on line of Erie & D. L. & W. R. R.; 1/3 mile from school; 2 1/2 miles from churches and butter factory. State road laid out. Nearest city, Corning, 7 miles distant, population about 14,000, reached by rail and highway. Surface of farm, some hilly, some rolling, some level, river flats. Soil, black and gravelly loam. Acres in meadow, 69; in natural pasture, 60; in timber, 75, white and yellow pine and different kinds of hard wood, all of good quality; acres tillable, 38. Fruit, 1 acre of apples. Best adapted to hay, all kinds of grain, tobacco, cabbage and onions. Fences, wire and rail, good condition. House, Colonial style, 12 rooms, fair condition. Outbuildings: carriage and horse barn, 32x40; grain barn, 36x42; shed, 20x90; tobacco barn, 32x80; hay barn, 32x44; hay barn, 30x46. Watered, house and barns, by driven well; fields, by springs. Conhocton River runs through farm. Occupied by owner. Reason for selling, owner wants to retire. Price, \$70 per acre. Terms, 2/3 cash, balance on time. Address Chas. R. Woodward, Curtis, N. Y.

TOWN OF CANISTEO

Population 3,441

No. 899—Farm of 109 acres; located 1 mile from P. O., 4 miles from railway station at Cameron, on line of Erie Ry., 3/4 mile from school, 1 mile from church. Highways, somewhat hilly but good. Nearest large village, Hornell, 13 miles distant, reached by rail and highway. Surface of farm, level and sloping. Acres in meadow, 10. No buildings. Price, \$6 per acre. Terms, 1/2 down but prefer cash. Address M. E. Brady, Woodhull, N. Y., Box 144. Owner will rent.

TOWN OF CATON

Population 1,078

No. 900—Farm of 128 acres, located 7 miles from Corning P. O., R. D. 1, 7

miles from railway station at Corning, on line of Erie, Lackawanna & N. Y. C. Rys., 1/2 mile from school, 1 1/2 miles from churches, butter factory and cheese factory, 5 miles from milk station and milk condensing plant. Highways, somewhat hilly but good. Surface of farm mostly level. Altitude about 1,400 ft. Soil, clay loam. Acres in meadow, 70; in natural pasture, 45; in timber, 10, fine sugar bush. Acres tillable, 95. Fruit, apples. Best adapted to hay, oats, buckwheat and corn. Fences, wire, good condition. House, new, 6 rooms with fine cellar, good condition. Outbuildings: barn, 36x86, concrete floor in cow stable, large silo, hay barn, 36x40 and granary 10x12. Watered, house and barn by well, fields by springs. Occupied by tenant. Reason for selling, owner resides in city and is not a farmer. Price, \$3,500. Terms, at least \$300 down, remainder \$200 with interest yearly. Address Amelia E. Hotchkiss, c/o Turner & Turner, Elmira, N. Y. Owner will rent.

TOWN OF ERWIN

Population 2,211

No. 901—Farm of 175 acres; 2 miles from Painted Post P. O. and railway station; R. D. 1. Soil, clay and sand loam, good. Some timber, white pine, small. Medium-sized house, in good condition. Barn, 60x38, in good condition. Premises well watered. Fences, wire, mostly good. This farm is about 4 or 5 miles from Corning. Price, \$40 per acre. Terms, cash preferred but would leave part on mortgage. Address Mrs. Harriet M. Wilkes, Bath, N. Y., R. D. 1.

TOWN OF HARTSVILLE

Population 651

No. 902—Farm of 100 acres, located 4 miles from Canisteo P. O., R. D. 1, 2 miles from railway station, 1/2 mile from school, 4 miles from churches, butter factory and milk station, 2 1/2 miles from cheese factory. Highways, hilly. Surface of farm hilly and rough. Soil, clay, good. Acres in meadow, 60; in natural pasture, 30; in timber, 10, oak and hemlock. Acres tillable, 90. Fruit, 8 apple and 8 plum trees. Fences, woven wire, good. House, 32x32. Barn, 40x50. Watered by springs. Occupied

* Farm is in hands of agent or real estate dealer.

by tenant. Price, \$2,200. Terms, \$200 cash. Address Stephen Bartlough, Canisteo, N. Y. Owner will rent on shares or with option to buy.

No. 903—Farm of 74 acres, located $3\frac{1}{4}$ miles from Hornell P. O., R. D. 7, 3 miles from railway station at Hornell, on line of Erie Ry.; $\frac{3}{4}$ mile from school, 2 miles from churches, $2\frac{1}{2}$ miles from cheese factory and milk condensing plant. Highways good but somewhat hilly. Soil, gravel and loam, good. Acres in meadow, 30; in natural pasture, 14; in timber, 10, small oak. Acres tillable, 65. Fruit, 20 acres of berries. House, 20x30. Good barn. Watered, house by well, barn and fields by springs. Occupied by owner. Price, \$2,000. Terms, $\frac{1}{2}$ cash. Address James K. Bush, Hornell, N. Y., R. D. 7.

TOWN OF HORNBY

Population 870

No. 904—Farm of 28 acres; 5 miles from Beaver Dams P. O., R. D. 3; 5 miles from railway station at Beaver Dams, on line of N. Y. C. R. R.; $\frac{1}{8}$ mile from school and church; 7 miles from butter factory. Highways, good. Nearest city, Corning, population about 14,000, 7 miles distant, reached by highway. Altitude, 1,900 feet. Soil, clay subsoil. Acres in meadow, 8; in natural pasture, 14; in timber, 6, maple, ash and hemlock; acres tillable, 15. Fruit, apples and pears. Best adapted to hay and grain. Fences, rail, wire and board. House, 12 rooms, fair condition. Barn, 26x24, fair condition. Watered, house, by well; barn and fields, by spring. This farm is located 3 miles from Hornby Lake. Occupied by owner. Reason for selling, owner has more land than he can attend to. This would make a fine poultry farm and keep a horse and 2 cows. Price, \$1,000. Terms, \$500 down, balance on easy terms. Address E. J. Easterbrook, Beaver Dams, N. Y., R. D. 3.

No. 905—Farm of 160 acres, located 6 miles from Corning P. O., R. D. 5, 1 mile from railway station at Ferenbaugh, on line of N. Y. C. & H. R. Ry.; $\frac{1}{8}$ mile from school, 6 miles from churches. Highways good. Surface of farm, $\frac{1}{2}$ level, remainder somewhat hilly. Soil, gravel and loam. Acres in meadow, 40; in natural pasture, 20.

Acres tillable, 130. Fruit, apples, plums and pears. Best adapted to corn, wheat, oats, buckwheat, potatoes, etc. Fences, stump, stone and woven wire. House, large, fair condition. Outbuildings: grain barn, 32x80, basement, straw shed and cow stable, 24x40; wagonhouse, 22x35, henhouse, etc. Watered, house and barn by water piped from spring, fields by creek. Occupied by tenant. Reason for selling, to close an estate. Price, \$5,500. Terms, \$3,000 cash, balance on mortgage at 6%. Address Samuel Oldfield, 73 Sterling St., Corning, N. Y.

TOWN OF HOWARD

Population 1,461

No. 906—Farm of 115 acres; 2 miles from Howard P. O.; 5 miles from Avoca station, on line of Erie R. R. and D. L. & W. R. R.; R. D. 2 from Kanona. Highways, good. Soil, hill, gravelly, bottom land, loam and muck. Acres in meadow, 25; tillable, 50; natural pasture, 25; timber 15, beech and maple of medium size. Fruit, 40 apple trees. Best adapted to rye, oats, buckwheat and corn. Altitude, 1,400 to 1,600 feet. Fences, wire, in fair condition. House, 2 stories, brick, 32x29, with wood addition, 25x16. Barn, 30x35, with wing, 32x29, containing granary and cow stable, with hay loft above; shed, 24x28; horse barn, 25x35; hog- and henhouse, 2 stories, 12x16; woodhouse, with workshop above, 16x24. Watered, house, by spring; barns and fields, by springs and creek. This farm is well adapted to dairy purposes. It is known as the Trout Brook Farm, having a trout pond fed by a large spring. Reason for selling, owner is not a farmer. Price, \$2,500. Terms, \$500 down, balance on time at 5%. Owner will rent with option to buy. Address W. P. Kyssor, 121 W. William St., Bath, N. Y.

TOWN OF LINDLEY

Population 1,153

No. 907—Farm of 226 acres; located 2 miles from Lindley P. O., R. D. 2, $2\frac{1}{2}$ miles from railway station at Lindley, on line of N. Y. C. Ry.; $\frac{3}{4}$ mile from school, $1\frac{3}{4}$ miles from M. E. church, 2 miles from cheese factory, $2\frac{1}{2}$ miles from milk station. Highways in fair condition. Nearest city Corning, 13 miles distant, reached by rail and highway. Surface of farm, some hilly and

some level. Altitude, 1,224 feet. Soil, clay and sandy loam. Acres in meadow, 60; in natural pasture, 60; in timber, 40, pine and oak. Acres tillable, 150. Fruit, 14 apple and 3 pear trees. Best adapted to hay, potatoes and spring grain. Fences, wire and stump, good. House, 12 rooms, first-class condition. Outbuilding: barn, 32x72, first-class condition. Watered, house by well, barn and fields by running water. Occupied by owner. Reason for selling, to close an estate. Price, \$4,500. Terms, \$3,000 cash. Address J. J. Driscoll, Lindley, N. Y.

No. 908—Farm of 152 acres, located 3 miles from Lindley P. O., R. D. 2, 3½ miles from railway station at Lindley on line of N. Y. C. & H. R. Ry.; ¼ mile from school, 2½ miles from church, 3 miles from cheese factory. Highways in fair condition. Nearest city, Corning, 12 miles distant, reached by rail and highway. Surface of farm, part level and part rolling. Altitude 1,320 feet. Soil, muck and clay, good. Acres in meadow, 40; in natural pasture, 40; some timber. Acres tillable, 100. Fruit, good apple orchard, 3 or 4 acres. Best adapted to hay, oats, wheat, rye, barley, corn, potatoes and buckwheat. Fences, mostly woven wire, some stump. House, 28x42, good condition. Outbuildings: barn, 34x84, with basement, good condition, horse barn, 26x48. Watered by drilled well and springs. Occupied by tenant. Reason for selling, owner unable to work farm. Price, \$5,000. Terms, small amount down, balance to suit purchaser. Address A. S. Odle, Lindley, N. Y. Owner will rent.

TOWN OF PLATTSBURG

Population 1,834

No. 909—Farm of 115 acres; 1½ miles from Prattsburg P. O.; 1 mile from Bean railway station, on line of Kanona & Prattsburg R. R.; R. D. 5 from Prattsburg. Highways, in good condition. Soil, gravelly loam. Acres in meadow, 70; timber, 10, hemlock and beech, small; all tillable except wood lot. Fruit, 70 apple trees. Adapted to general farming. Occupied by owner. Fences, rail and wire, in poor condition. House, large, 2 stories, with annex, in good condition. Barn, 32x80, with basement under all, shed, 24x40, in fair con-

dition. Watered, house and barns, by well; fields, by springs and brooks. Reasons for selling, owner has other business which requires close attention. Name and address of owner, W. W. Babcock, Prattsburg, N. Y.

TOWN OF TUSCARORA

Population 1,006

*No. 910—Farm of 160 acres; 5 miles from post office and railway station at Addison, on line of Erie R. R.; 1 mile from school; ½ mile from church; 2 miles from cheese factory and milk station. Highways, hilly. Nearest large village, Addison, population about 2,500, reached by highway. Surface of farm, rolling. Altitude, 1,300 feet. Soil, loam and gravel. Acres in meadow, 160; acres tillable, 160. Best adapted to hay, oats and potatoes. Fences, wire, good condition. House, in good condition. Barns, in good condition. Watered by well. This would make a good dairy farm. Occupied by tenant. Price, \$3,500. Terms, \$2,000 cash, balance on mortgage for 3 years. Address A. G. Crane, agent, Addison, N. Y.

TOWN OF URBANA

Population 2,659

No. 911—Farm of 102 acres; 4 miles from Hammondsport P. O. and railway station, on line of B. & H. R. R.; R. D. 4 from Hammondsport. Highways, good. Soil, mostly gravelly loam, clay subsoil. Acres in meadow, 40; tillable, 90; natural pasture, 20; timber, 8, maple, oak and chestnut, second growth. Fruit, 60 apple trees, some plums and cherries. Adapted to oats, corn, barley and buckwheat. Fences, wire and rail, in fair condition. Large house, in good condition. Barns: grain barn, 30x40, sheds attached; wagonhouse, 26x36; toolhouse, 20x24; hog and poultry-house. Watered, house, by well and cistern; barn, by well; fields, by springs. Reasons for selling, owner engaged in other business. Price, \$3,000. Terms, 2/3 down, balance on time. Owner will rent. Name and address of owner, Fred W. Locke, Hammondsport, N. Y.

No. 912—Farm of 252 acres; 5 miles from railway station; 1 mile from school and Baptist church; R. D. 2 from Savona. Good dirt road. Near-

* Farm is in hands of agent or real estate dealer.

est large villages: Savona, population 1,000; Bath, population 4,000. Rolling surface. Gravelly loam soil. 40 acres in timber; 152 acres tillable. 100 apple trees, some pears, plums and cherries. Best adapted to corn, oats, wheat and potatoes. Fences, stump, rail and wire. House, 9 rooms, in good condition. 4 barns, one, 32x76, one, 32x60, two, 32x40, all with basements; sheep barn, 30x90; hoghouse; toolhouse; all in good condition. Watered, house, by well and cistern; barns and fields, by well and springs. Keuka Lake, 3 miles distant. Reason for selling, advanced age of owner. This is one of the best stock farms in the county. It has been in the family since 1866 and never been leased. Price, \$45 per acre. Address Lloyd J. Watkins, Bath, Steuben Co., N. Y.

TOWN OF WAYNE

Population 643

No. 913—Farm of 87 acres; 1½ miles from village of Wayne; 2½ miles from Keuka P. O.; 6 miles from Hammondsport railroad station; R. D. Soil, gravel and loam. Acres in meadow, 60; acres pasture, about 12; acres timber, 6. House, 22x24, main, kitchen and woodshed, 18x30, in good condition. Main barn, 30x60; shed, 24x50, all newly shingled. Watered by well, springs and creek. Fences, mostly wire, in fair condition. Good orchard. 1 acre of grapes. Nice location, between Lake Keuka and Waneta. Reason for selling, to settle an estate. Price, \$2,500. Terms, \$1,000 down. Owner will rent on shares or with option to buy. Name and address of owner, Theodore Campbell, Keuka, N. Y.

No. 914—Farm of 88 acres, located 3 miles from Hammondsport P. O., R. D. 4, 3 miles from railway station at Ham-

mondsport, on line of Erie Ry.; ½ mile from school and Protestant churches. Highways good. Surface of farm, gently rolling. Soil, clay loam. Acres in timber, 18, white and red oak, ash, hickory and maple. Acres tillable, 60. Fruit, apple orchard and some cherry trees. Best adapted to hay, grain, potatoes, corn, apples, pears and cherries, also a few grape vines. House, good size, poor condition. Outbuildings: barn, 36x40; barn, 30x40; 2 sheds, all need repairs. Watered by well and springs. Unoccupied. Reason for selling, owner lives in California. Price, \$2,000. Terms, cash. Address Frank Crawford, 3228 East 4th Street, Los Angeles, California.

TOWN OF WOODHULL

Population 1,455

*No. 915—Farm of 640 acres; 7 miles from Addison P. O. and railway station, on line of Erie R. R.; 2 miles from school; 5 miles from churches; 1¼ miles from cheese factory and milk station; 6 miles from milk condensing plant. Highways, hilly. Nearest large village, Addison, population about 2,500. Surface of farm, rolling. Altitude, about 1,200 feet. Soil, generally gravelly. Acres in meadow, 100; in natural pasture, 100; in timber, 440, mostly hard wood; all tillable, except woodland. Best adapted to hay and oats. Fences, wire, good condition. House, 8 rooms, good condition. Outbuildings: barn, 32x66; barn, 20x30; barn, 20x64; barn, 26x36; 2 tobacco sheds, 26x48; shed, 16x50. Watered, house, by well; barns, by springs. Tuscarora Creek runs through farm. Reason for selling, owner cannot attend to farm. Price, \$11,000. Terms, \$5,000 cash, balance on mortgage for 3 years. Address A. G. Crane, agent, Addison, N. Y.

SUFFOLK COUNTY

Area, 720 square miles. Population, 96,138. Annual precipitation, 60.2 inches. Annual mean temperature, 51.3°. Number of farms, 2,491. County seat, Riverhead.

This comprises the middle and eastern part of Long Island and is the extreme southeastern county of New York State. The waters of Long Island Sound border its north shore with the Atlantic Ocean on its southern side. The coast is deeply indented by inlets and bays, which afford good harbors.

The surface along the south shore is very flat and only about fifty feet above sea level. Extending across the county north and south from Smithtown Bay to Great South Bay is a level valley averaging about four miles wide. These level tracts all have fertile sandy loam soil. The northeastern portion rises in gentle

* Farm is in hands of agent or real estate dealer.

slopes to about 300 feet above sea level and the soil is a clay and gravelly loam. From Smithtown Bay east along the north shore is a ridge of hills extending to the extreme end of the county, while to the south it is paralleled by a low broad upland, the soil being gravelly loam. Between these ridges is an interval of level land with fertile sandy loam. The surface is extensively covered with forests. There is, however, very little commercial timber to be found.

The leading crops are corn, 743,721 bushels; oats, 61,257 bushels; wheat, 87,812 bushels; rye, 29,702 bushels; potatoes, 2,200,187 bushels; hay and forage, 22,011 tons. Because of the short distance from this county to New York City much of the land is planted in garden truck and hundreds of farmers are engaged in this particular kind of farming. Along the south shore are found large duck and poultry farms, several of which market more than 100,000 ducks annually. Cranberries are also very extensively grown. The value of all farm property is \$33,537,021, an increase of 41.6 per cent. The average price of improved land is \$172.50, showing a gain of \$68.15 per acre over that shown by the census of 1900. This rise in value is largely caused by its proximity to New York City and by the rapid development of the poultry and vegetable business. Dairy cows reported: 5,996; horses, 6,347; swine, 9,945; sheep, 3,347; poultry, 305,844; product of milk, 2,794,136 gallons, total value of the same being \$276,676. The county contains 129 district schools, has 57 miles of state and county roads and 1,462 miles of other improved highway. It is intersected by the Long Island and South Side railroads and electric lines in the extreme western part. The agricultural organizations comprise 3 granges, the Long Island potato exchange, farmers' agricultural association, a county agricultural society, a farmers' club and the Huntington Horticultural and Agricultural Society.

TOWN OF BABYLON

Population 9,030

*No. 916—Farm of 45 acres; $1\frac{1}{2}$ miles from Babylon P. O.; $1\frac{1}{4}$ miles from Babylon railway station, on line of L. I. R. R.; $1\frac{1}{4}$ miles from school; $1\frac{1}{2}$ miles from churches. Nearest city, New York, about 20 miles distant, reached by highway. Surface of farm, level. Soil, heavy loam. Acres in natural pasture, 20; in timber, 5, pine, oak and chestnut. Fruit, apples, peaches and pears. Best adapted to potatoes, corn, hay and all other crops suited to this locality. Fences, picket and rail. House, large, fine condition. Large barn, good condition. Watered, house and barns, by pumps. Small lake on property. Occupied by owner. Price, \$25,000. Terms, $\frac{1}{2}$ cash. Address Henry Oakley, agent, Babylon, L. I., N. Y.

*No. 917—Farm of 7 acres; $1\frac{1}{2}$ miles from Babylon P. O.; $\frac{1}{2}$ mile from Babylon railway station, on line of L. I. R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{2}$ miles from churches and milk station. Nearest large village, Babylon, population about 4,000, reached by highway. Surface of farm level. Soil, loam. Acres tillable, 6. Fruit, peaches, apples and pears. Best adapted to truck gardening. House, 7 rooms. Good outbuild-

ings. House, watered by pump. Occupied by owner. Reason for selling, owner in other business. Price, \$5,000. Terms, \$1,000 cash. Address Henry Oakley, agent, Babylon, L. I., N. Y.

*No. 918—Farm of 102 acres; 1 mile from Deer Park P. O. and railway station, on line of L. I. R. R.; $\frac{1}{4}$ mile from school and Methodist church; 1 mile from milk station. Highways, level and good. Nearest city, New York, reached by highway. Surface of farm, part level and part rolling. Soil, good, heavy loam, underlined with gravel. Acres in natural pasture, 50; in timber, 72, oak, chestnut, walnut and hickory; acres tillable, 50. Fruit, apples, pears, peaches, quinces, cherries and plums. Best adapted to potatoes, corn, cabbage and fruits. Fences, in good condition. Large house, in good condition. Large barn, in good condition. Watered by springs. Reason for selling, owner has other interests. Price, \$20,000. Terms, to suit purchaser. Address Henry Oakley, agent, Babylon, L. I., N. Y.

No. 919—Farm of 230 acres; $\frac{3}{4}$ mile from Deer Park P. O. and railway station, on line of L. I. R. R.; $\frac{1}{4}$ mile from school and Methodist church. Nearest city, New York, population over

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4,000,000, reached by highway; nearest large village, Babylon, population about 4,000. Surface of farm, rolling. Altitude, about 150 feet. Good loam soil. Acres in natural pasture, 170; acres in timber, 60, oak and chestnut; acres tillable, 170. Fruit, apples, pears and peaches. Best adapted to hay, corn and potatoes. Fences, rail. House, medium size, in good condition. Large barns, in good condition. Watered by wells. Occupied by owners. Reason for selling, to close an estate. Price, \$350 per acre. Terms, $\frac{1}{2}$ cash. Address The W. V. Whitson heirs Deer Park, N. Y.

*No. 920—Farm of 171 acres; located $\frac{1}{2}$ mile from Babylon P. O. and railway station, on line of L. I. Ry.; $\frac{1}{2}$ mile from school and churches. Surface of farm level. Soil, heavy loam. Acres in natural pasture, 50; in timber, 120, oak and pine. Acres tillable, 50. Fences, part wire. House, small, good condition. Barn small, fair condition. Watered by pump. Price, \$500 per acre. Address Henry Oakley, agent, Babylon, L. I., N. Y.

*No. 921—Farm of 32 acres, located 3 miles from Babylon P. O., $2\frac{3}{4}$ miles from railway station at Babylon, on line of L. I. Ry.; $2\frac{3}{4}$ miles from school, 3 miles from churches. Surface of farm level. Soil, loam. Acres in timber, 6, pine, oak and chestnut. Acres tillable, 26. Best adapted to corn, potatoes, etc.

No buildings. Price, \$7,000. Terms, $\frac{1}{2}$ cash. Address Henry Oakley, agent, Babylon, L. I., N. Y.

TOWN OF RIVERHEAD

Population 5,345

*No. 922—Farm of 35 acres; 5 miles from Riverhead, P. O., R. D.; 4 miles from railway station at Aquebogue, on line of L. I. R. R.; $\frac{1}{2}$ mile from school and churches. Highways, good. Surface of farm, rolling. Soil, loam, good. 5 acres of timber; acres tillable, 30. Best adapted to potatoes and cauliflower. Fences, rail. House, 8 rooms, fair condition. Barns, in fair condition. Watered by cistern. Occupied by tenant. Long Island Sound adjacent to farm. Price, \$9,000. Terms, $\frac{1}{2}$ cash. Address Dugan Brothers, agents, Riverhead, N. Y.

*No. 923—Farm of 78 acres; 5 miles from Riverhead P. O., R. D.; 4 miles from railway station at Aquebogue, on line of L. I. R. R.; $\frac{1}{4}$ mile from school and church. Highways, good. Surface of farm, rolling. Soil, loam, good. Acres in timber, 24, mostly oak; acres tillable, 54. Best adapted to potatoes and cauliflower. Fences, rail. House, 7 rooms, fair condition. Barn, in fair condition. Watered by cistern. Occupied by tenant. Price, \$225 per acre. Terms, $\frac{1}{2}$ cash. Address Dugan Bros., agents, Riverhead, N. Y.

SULLIVAN COUNTY

Area, 911 square miles. Population, 33,808. Annual precipitation, 37.6 inches. Annual mean temperature, 46.3°. Number of farms, 3,851. County seat, Monticello.

This county is located in the southeastern part of the state bordered on the south by Pennsylvania, on the west and southwest by the Delaware River and is drained by the Mongaup, Neversink, Beaverkill and Shawangunk Rivers, Rondout Creek and two branches of Callicoon Creek.

The surface is hilly with a constantly increasing elevation from 1,000 feet in the southern part to 2,400 feet in the extreme north of the county above tide water. It is extensively covered with forests of ash, beech, birch, maple, chestnut, oak and pine. Red sandstone underlies a large part of the surface and bluestone is largely quarried and shipped for flagging, paving, etc. The soil in the north and central sections is largely a formation of red shale. In the southern half of the county it is more rolling and clay and gravelly loam well adapted for grain growing are found. As a whole the soil is quite productive and adapted to pasturage and general farming.

The county produced corn, 146,600 bushels; oats, 138,200 bushels; buckwheat, 96,033 bushels; rye, 23,532 bushels; potatoes, 259,461 bushels; hay and forage, 62,200 tons. Total value of all farm property is \$19,328,466, an increase of 57.4

* Farm is in hands of agent or real estate dealer.

per cent. in the last ten years. It is noted that even with this great gain the buildings in the county are still worth on an average \$7 per acre more than the land itself. We know of no other state where the land is still fertile as it is in this county in which this condition is found. Domestic animals reported are dairy cows, 21,230; horses, 7,215; swine, 7,462; sheep, 6,558; poultry, 200,742; production of milk, 8,555,690 gallons, the total value of which was \$683,025. The county is intersected by the N. Y., O. & W. railroad and by the Delaware & Hudson Canal. A branch of the Erie railroad extends from Port Jervis to Monticello. In the central part of the county among the highlands are located many excellent sanitariums and the benefit received seems to be equal to that afforded by the Adirondack regions. The climate is not nearly as cold as in the Adirondacks. The water is noted for its purity and clearness. There are 174 district schools in the county and an excellent academy is located at Monticello with high and graded schools in the villages. The county contains 35 miles of state and county roads and 1,695 of other improved highways, 32 milk stations and factories are conveniently located in the county and its agricultural organizations consist of one county agricultural society, two granges, six Hebrew farmers' associations, a farmers' club and a farm and garden club.

TOWN OF CALLICOON

Population 2,026

No. 924—Farm of 55 acres; located 2 miles from Jeffersonville P. O., 10 miles from railway station at Callicoon, on line of Erie Ry.; $\frac{1}{2}$ mile from school, 2 miles from churches and butter factory. Highways good. Surface of farm, rolling and hilly. Altitude, 1,400 feet. Best adapted to hay, corn and oats. Fences, stone and wire. House, accommodates 40 boarders, good condition. Outbuildings in good condition. Occupied by owner. Reason for selling, advanced age of owner. Price, \$5,500 including stock and furniture. Terms, \$3,500 cash, balance on mortgage at 5%. Address Chas. Schmidt, Jeffersonville, N. Y.

No. 925—Farm of 79 $\frac{1}{2}$ acres; located 2 miles from Callicoon Center P. O., 10 miles from railway station at Callicoon, on line of Erie Ry., 2 miles from school, churches and butter factory. Highways good. Surface of farm, hilly. Altitude, 1,300 feet. Acres in timber, 8. Best adapted to grass, corn and oats. Fences, stone and wire. House, 8 rooms, new. Outbuildings in good condition. Occupied by owner. Reason for selling, owner wishes to leave country. Price, \$3,500. Terms cash. Address Chas. Schmidt, Jeffersonville, N. Y., Box 244.

No. 926—Farm of 35 acres, located 2 miles from Hortonville P. O., 4 miles from railway station at Callicoon, on line of Erie Ry., 2 minutes walk from school, 1 $\frac{1}{4}$ miles from Protestant and Catholic churches. Highways, stone, good. Nearest large village, Liberty, 15 miles distant, reached by State road.

Surface of farm level. Good soil. Acres in meadow, 8; in natural pasture, 79; in timber, 8, birch, beech, maple, second growth. Acres tillable, 25. Fruit, pears, apples and cherries. Best adapted to corn, potatoes, rye, oats and buckwheat. Fences, stone and wire, good condition. House, 22x44, first-class condition. Outbuildings: barn, 18x40, icehouse, 10x12, henhouse, 16x20, all in good condition. Watered, house, by pump, barns and fields by stream. Occupied by owner. Reason for selling, ill health of owner. Price, \$3,300. Terms, $\frac{1}{2}$ cash. Address Edward A. Schmidt, Hortonville, N. Y.

TOWN OF COCHECTON

Population 1,142

No. 927—Farm of 350 acres, in western part of Sullivan county, on the Ten Mile River; 6 miles from the railway station at Narrowsburg, on the Erie R. R. main line; 123 miles from New York city. This property is located on the main road and cross road at Cochection Center which is in the direct line of the proposed State road, 2 miles from Lake Huntington, a beautiful summer resort. There is a daily stage service, carrying the mail to and from Narrowsburgh, which has a post-office, general store, school and blacksmith shop. Acres tillable and in pasture, 150; balance, wood land, second growth white pine, hemlock, birch, beech, maple, about 100,000 feet of lumber, consisting chiefly of pine and hemlock and about 300 cords of poplar. Fine trout stream running through property. About 300 yards east of house is an artificial lake, formed by a dam built across the Ten Mile River; this

lake is well stocked with pickerel and has an area of about 25 acres; dam has heavy wall, 16 feet through, and faced with about 1 foot of concrete; affords good water power. On the west shore of lake is a beautiful pine grove, good hunting ground for small game such as rabbits and partridges. House, 15 rooms, good condition. Outbuildings: barn, 30x60, with concrete basement; stable for horses and cattle; barn, 36x64, used for storing hay and grain; blacksmith shop and work shop, 20x40; wood and coal house, 16x18, with sleeping room above; henhouse, 16x41, with concrete floor. There is a spring on the hillside, with elevation enough to have running water in both house and barn. Reason for selling, death of owner's wife. Price for whole farm, \$15,000. This price includes horses, cattle, chickens, pigs, wagons, sleighs, harness, all farm machinery and tools. Owner will divide property and sell 325 acres consisting of barns, stream, lake and woodland, for \$10,000. Address R. B. Heinle, Cohecton Center, N. Y.

TOWN OF DELAWARE

Population 1,842

No. 928—Farm of 50 acres, 6 miles from Callicoon P. O., R. D. 1 and from railway station on line of Erie R. R.; 1 mile from school; 2½ miles from churches; 1½ miles from cheese factory. Highways, State road. Nearest village, Jeffersonville, population 800, 2 miles distant. Surface, rolling. Soil, good. Acres in meadow, 15; natural pasture, 10; timber, 5; acres tillable, 20. Fruit, about 80 apple trees, some pear trees, 15 grapevines. Best adapted to oats, corn, potatoes, hay, etc. Fences, stone, good condition. House, 31x80, 2½ stories, almost new. Outbuildings: barn, 30x40, 38x40; shed, 20x40, good condition. House and barns, watered by wells; fields, by springs. Kenoza Lake, 1¼ miles distant. This is a fine location for summer boarding place, capacity 35 people. Occupied by owner. Reason for selling, advanced age of owner. Price, \$6,000. Terms, 2/3 cash, balance on mortgage. Owner will rent. Address Fred Justin, Callicoon, N. Y., R. D. 1.

TOWN OF FORESTBURGH

Population 544

No. 929—Farm of 30 acres, located ½ mile from Oakland Valley P. O., adjoin-

ing railway station at Oakland, on line of N. Y. O. & W. Ry.; ½ mile from school and church, near milk station, Highways in good condition. Nearest large village, Port Jervis, 12 miles distant, reached by rail and highway. Surface of farm, ½ about level. Altitude about 900 feet. Soil, part light and part good for grass. Acres in meadow, 8; in natural pasture, 10; acres tillable, 15. Fruit, 50 apple trees. Best adapted to potatoes, corn, garden truck, etc. Fences, mostly wire, good condition. House, 9 rooms, fair condition. Outbuildings, two barns, one, 18x24; one, 20x32. Watered, house and barns by running water. Occupied by owner. Reason for selling, owner in other business. Price, \$4,000. Terms, ½ cash, balance on easy terms. Address M. E. or P. H. Galligan, Oakland Valley, N. Y.

TOWN OF FREMONT

Population 2,110

No. 930—Place of about 2 acres, located 1/16 of a mile from Long Eddy P. O., 1/12 of a mile from Long Eddy railway station, on line of Erie R. R.; 1/16 mile from school and churches. Highways, level, stone. Surface of farm level. Good soil. Acres tillable, 2. Fruit, apples and pears. Best adapted to garden truck. Fence, wire and board. House, 28x40, with wing, 40x50, good condition. Outbuildings, barn, 24x36, fair condition; garage, 10x18. Watered by running water. Occupied by tenant. Reason for selling, owner has more property than he wants. Price, \$3,500. Terms, easy. Address S. O. Porter, Long Eddy, N. Y. Owner will rent.

TOWN OF HIGHLAND

Population 975

No. 931—Farm of 80 acres, located 1 mile from Yulan P. O., 4 miles from railway station at Shohola, Pa., on line of Erie R. R.; 1 mile from school, Catholic and Protestant churches; 4 miles from milk station. Highways, hilly but good. Nearest large village, Port Jervis, 20 miles distant, reached by rail and highway. Surface of farm rolling. Altitude 1,800 feet. Soil, loam. Acres in meadow, 30; in natural pasture, 3; in timber, 46, pine, oak, maple and chestnut. Acres tillable, 30. Fruit, 100 apple, 5 pear, 3 cherry and 10 plum trees. Best adapted to corn, oats, rye,

grain, etc. Fences, stone, fair condition. House, 27 rooms, good condition. Outbuildings, barn, 26x36; barn, 20x40; icehouse; barn, 20x30; shop, shed and chicken house, good condition. Watered by two wells and lakes. Three lakes join farm. Occupied by owner. Reason for selling, advanced age of owner. Price, \$12,000. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address Jos. Tether, Yulan, N. Y.

No. 932—Farm of 98 acres, located 4 miles from Barryville P. O., 4 miles from railway station at Shohola, Pa., on line of Erie R. R.; $\frac{1}{2}$ mile from school; $1\frac{1}{4}$ miles from churches; $\frac{1}{2}$ mile from butter factory; 4 miles from milk condensing plant. Highways, fairly good but hilly. Surface of farm level. Altitude, 1,500 feet. Soil, sandy loam. Acres in meadow, 30; in natural pasture, 30; in timber, 38, pine, oak and chestnut. Fruit, 15 apple trees. Best adapted to rye, corn, oats, buckwheat and potatoes. Fences, wire and stone. House, 32x44, 4 stories, good condition. Outbuildings, barn, 24x44, good condition; wagonhouse, 16x36; woodhouse, 12x20, good condition. Watered by two wells, spring and brook. Occupied by owner. Reason for selling, advanced age of owner. Price, \$6,000. Terms, \$4,000 cash, balance on mortgage. Address Theo. West, Yulan, N. Y.

No. 933—Farm of 50 acres, located 2 miles from Barryville P. O., 2 miles from railway station at Shohola, Pa., on line of Erie R. R.; 2 miles from school and milk station; 1 mile from Protestant church. Highways, somewhat hilly but good. Surface of farm, some rolling, mostly rough, wild land. Altitude, 1,400 feet. Soil, loam. Acres in meadow, 8; in natural pasture, 3; in timber, 39, white pine, chestnut and oak. Acres tillable, 8. Fruit, currants, gooseberries, 1 plum, 3 apple and 3 peach trees. Best adapted to rye, buckwheat and corn. Fences, wire, poor condition. House, 9 rooms, good condition. Outbuildings, barn, 26x30, 3 stories; henhouse; icehouse; bowling alley and pool room. Watered by spring and brook. Occupied by owner. Reason for selling, owner desires to go West. Price, \$4,500. Terms, \$3,000 cash, balance on mortgage. Address Chas. E. Phillips, Barryville, N. Y.

No. 934—Farm of 503 acres, located $2\frac{1}{2}$ miles from Barryville P. O., Star route, 3 miles from railway station at Shohola, Pa., on line of Erie R. R.; 1 mile from school; $2\frac{1}{2}$ miles from Catholic and Protestant churches. Highways, somewhat hilly but good. Surface of farm rolling. Altitude about 1,300 feet. Soil, light loam. Acres in meadow, 10; in natural pasture, 10; in timber, 475, pine, chestnut, oak, maple and hardwood. Acres tillable, 28. Best adapted to hay, oats, corn and buckwheat. Fences, fair condition. House, 16 rooms, built 5 years ago for boarding house. Outbuildings, barn, 28x40; chickenhouse, 12x24; chickenhouse, 12x16, with basement for incubators. Watered, house and barn by water piped from spring. Occupied by owner. Reason for selling, ill health. Price, \$10,000. Terms, \$5,000 cash. Address C. M. Colville, Barryville, N. Y.

TOWN OF NEVERSINK

Population 1,743

No. 935—Farm of 200 acres; $1\frac{1}{4}$ miles from Grahamville; 12 miles from Fallsburg. Good stock farm, fine location. Plenty of wood, consisting of about 1,000 sugar maple trees and a quantity of oak and chestnut. Sugar bush, equipped with evaporator for making maple sugar. Fine trout stream. Contains one of the finest locations for a fish pond and hatchery in the State. House, 44x48, with wing, 24x26, in good repair, well painted. Large barns and all necessary outbuildings, nearly new. Watered by springs and brook. Well fenced. Farm is well provided with machinery, new engine, ensi-elevator, 50-ton silo in barn, thresher and cleaner, wood saw, corn planter. Meadows all mowed with machine. Will be sold with or without machinery. Reason for selling, owner not able to work on farm having only one hand. Price and terms, on application to owner, Thomas Barkley, Grahamsville, N. Y.

No. 936—Farm of 150 acres, located 2 miles from Neversink P. O., $8\frac{1}{2}$ miles from railway station at Luzon, on line of O. & W. R. R.; $\frac{1}{8}$ mile from school; 2 miles from Methodist church; $8\frac{1}{2}$ miles from milk station. Highways good. Nearest large village, Liberty, 9 miles distant, reached by highway. Surface of farm quite level. Soil, red slate

and loam. Acres in meadow, 50; in natural pasture, 60; in timber, 40, beech, birch and maple. Acres tillable, 40. Fruit, apples, pears and plums. Fences, barbed wire and pole. House, 24x32, nearly new, good condition. Outbuildings: barn 28x40, basement sheds, good condition. Watered, house and barn by spring, fields by brook. Occupied by tenant. Reason for selling, owner has other business. Price, \$3,500. Terms, $\frac{1}{2}$ down. Address A. D. Waight, Neversink, N. Y.

No. 937—Farm of 95 acres, located $1\frac{1}{2}$ miles from Neversink P. O., 9 miles from railway station at Luzon, on line of O. & W. R. R.; 1 mile from school; $1\frac{1}{4}$ miles from Methodist church; 9 miles from milk station. Highways, good condition. Nearest large village, Liberty, 9 miles distant, reached by highway. Surface of farm, slightly rolling. Soil, red loam. Acres in meadow, 35; in natural pasture, 20; in timber, 40, beech, birch and maple. Acres tillable, 20. Fruit, apples, pears, plums and quinces, about 200 trees. Best adapted to oats, buckwheat and potatoes. Fence, barbed wire and rail. House, large, 20 rooms. Outbuildings, barn, 26x36, good condition, other necessary outbuildings. Watered, house and barn by springs, fields by brook. Occu-

piated by owner. Reason for selling, advanced age of owner. Price, \$4,000. Terms, $\frac{1}{2}$ down. Address Henry W. Dean, Neversink, N. Y.

TOWN OF ROCKLAND

Population 3,455

No. 938—Farm of 318 acres; $3\frac{1}{2}$ miles from Livingston Manor, on line of O. & W. R. R.; 2 miles from school; $3\frac{1}{2}$ miles from churches and milk station. Highways, State road. Nearest villages: Livingston Manor, $3\frac{1}{2}$ miles distant; Liberty, population 2,500, 12 miles distant, reached by rail and highway. Surface of farm, rolling. Altitude, 1,500 feet. Soil, red slate loam. Acres in meadow, 70; in natural pasture, 70; in timber, 140, hemlock, pine and hard wood; acres tillable, 140. 29 apple and 4 pear trees. Best adapted to hay, potatoes, oats, corn and buckwheat. Fences, wire and stone wall, in fair condition. House, 20x29, with addition, 24x30, fair condition. Barn, 48x56; one, 48x39; and one, 18x24. Watered, house and barns piped. Fields, piped and watered by springs. Occupied by owner. Reason for selling, owner wishes to go into other business. Owner will rent with option to buy. Price, \$9,000. Terms, $\frac{1}{2}$ down. Address J. P. Johnson, Livingston Manor, Sullivan Co., N. Y.

TIOGA COUNTY

Area, 498 square miles. Population, 25,624. Annual precipitation, 47.11 inches. Annual mean temperature, 49.3°. Number of farms, 2,844. County seat, Owego.

This county is located in the southern tier of counties in about the center of the state and borders on Pennsylvania. It is intersected by the Susquehanna River. It is also drained by the Owego, Tatatonk and Pipe Creeks.

The surface is finely diversified by broad, verdant hills and valleys, some of which are quite deep. Woodlands of ash, beech, elm, hickory, oak and sugar maple and other trees cover nearly one-third of the county. The soil of the valleys is largely a deep gravelly loam, rich and fertile. That of the hills in the western section is a clay and gravelly loam. In the north black loam is much in evidence while south of the Susquehanna River shale and clay loam predominates. The soil is well adapted to general farming and pasturage. The leading crops are corn, 141,680 bushels; oats, 353,398 bushels; wheat, 20,924 bushels; buckwheat, 278,328 bushels; rye, 21,591 bushels; potatoes, 729,523 bushels; hay and forage, 80,889 tons. The value of all farm property is \$11,085,489 a gain of 12.6 per cent. since 1900. The average price of farm lands is \$14.29 per acre, but the average price of improved land is \$27.78. The total product of milk is 9,595,120 gallons; total receipts from the sale of dairy products, \$841,126.

The county is intersected by the Erie railroad, D. L. & W. main line and branch running north from Owego, and by three branches of the Lehigh Valley railroad. The local markets which may be found in Owego, Elmira, Ithaca and Binghamton are ample for all the products of the state and lie within a very short shipping distance. Buffalo, New York and Philadelphia furnish unlimited markets for those who wish to avail themselves of them.

There are 148 district schools in the county, several standard high schools and a free public academy located at Owego. There are a total of 1,067 miles of highway in the county, only 83 of which is not improved. The agricultural organizations established to conserve agricultural interest consist of a Pomona grange and two subordinate granges, two agricultural societies and two poultry associations.

TOWN OF BARTON

Population 6,659

No. 939—Farm of 144 acres, located 5 miles from Waverly P. O., R. D. 1, 4 miles from East Waverly railway station, on line of L. V. R. R.; $1\frac{1}{4}$ miles from churches; $1\frac{1}{2}$ miles from cheese factory. Highways, somewhat hilly but in fair condition. Surface of farm, practically level except about 15 acres. Altitude, 1,300 feet. Soil, volusia, clay loam. Acres in meadow, 30; in natural pasture, 35; in timber, 25, pine and oak. Acres tillable, 110. Fruit, apples and cherries. Best adapted to oats, potatoes, corn, buckwheat, hay and rye. Fences, wire, fair condition. House, large, 14 rooms, good condition. Outbuildings, main barn, 30x60, with basement; horse barn, 24x45, fair condition, some small repairs needed. Watered by well, cistern, springs and brooks. Occupied by owner. Reason for selling, advanced age of owner. Price, \$4,500. Terms, $\frac{2}{3}$ down, liberal discount for cash. Address Mrs. Caroline Bunnell, Waverly, N. Y., R. D. 1.

TOWN OF BERKSHIRE

Population 846

No. 940—Farm of 168 acres; $2\frac{1}{2}$ miles from Berkshire P. O., R. D. 1; $2\frac{1}{2}$ miles from railway station at Berkshire, on line of L. V. R. R.; 1 mile from district school; $2\frac{1}{2}$ miles from high school, churches, butter factory, milk station and milk condensing plant. Highways, somewhat hilly but good. Nearest city, Ithaca, population about 15,000, $18\frac{1}{2}$ miles distant; nearest large village, Owego, population about 5,500, $18\frac{1}{2}$ miles distant. Surface of farm, mostly level and rolling, one large hill in pasture. Soil, clay loam and black loam. Acres in meadow, 30; in natural pasture, 40; in timber, 35, oak, ash, basswood, chestnut, maple and beech; acres tillable, 93. Fruit, cherries, apples, pears, plums, grapes, berries. Best adapted to grass, oats, corn, buckwheat and potatoes. Fences, rail and wire, fair condition. House, 11 rooms, good condition, painted in 1910. Outbuildings, hay

barn, 30x80; another, 20x56; another, 20x25; granary and work shop, 16x19; icehouse, 12x14; good, all but floor in basement of hay barn. Watered by spring. Small lake, $1\frac{1}{2}$ miles from farm. Occupied by owner. Reason for selling, owner wants to give up farming. Price, \$5,000. Terms, $\frac{1}{2}$ cash, balance on first mortgage at 5%. Address Edmund R. Granger, Sr., Berkshire, N. Y.

No. 941—Farm of 134 acres, located $\frac{1}{2}$ mile from Berkshire P. O., R. D. 3, 1 mile from railway station at Berkshire, on line of Lehigh Valley R. R.; 1 mile from school, butter factory and milk station; $\frac{1}{2}$ mile from Protestant churches; 3 miles from cheese factory and 4 miles from milk condensing plant. Highways good. Nearest city, Ithaca, 20 miles distant, reached by rail and highway. Surface level and hilly. Soil, loam. Acres in meadow, 30; in natural pasture, 100; in timber, 4, beech, chestnut and maple. Acres tillable, 130. Fruit, 25 apple trees, 1 pear tree. Best adapted to hay, corn, oats, potatoes, buckwheat and millet. Fences, mostly woven wire, good condition. House, 9 rooms, large, excellent condition. Outbuildings, 3 barns, one, 36x56; one, 20x30; one, 30x40; henhouse and granary, good condition. Watered by well and spring. Occupied by owner. Reason for selling, owner has other business. Price, \$9,000. Terms, $\frac{1}{2}$ cash. Address Geo. L. Andrews, Berkshire, N. Y.

TOWN OF NEWARK VALLEY

Population 2,102

No. 942—Farm of 100 acres, located 3 miles from Newark Valley P. O., R. D. 2, 3 miles from railway station at Flemingville, on line of L. V. R. R.; $\frac{1}{2}$ mile from school, churches, butter factory and milk station. Highways good. Nearest large village, Owego, 8 miles distant, reached by highway. Surface of farm, 40 acres hilly, 60 acres rolling and level. Soil, clay. Acres in meadow, 60; in natural pasture, 25; in timber, 2, small oak, pine and hemlock. Acres

tillable, 80. Fruit, apples, pears, plums and cherries, also 4 grape vines. Best adapted to potatoes, buckwheat, corn and oats. Fences, about $\frac{1}{2}$ woven wire, balance board, good condition. House 40x60, 9 rooms, good condition. Outbuildings, horse barn, 30x60; barn, 36x40; cow barn, 36x60; sheep shed, 16x20; tool shed, 20x40; henhouse, 12x20. Watered, house by running water, barn by pump, fields by springs. Occupied by tenant. Reason for selling, owner wants to use money in other business. Price, \$2,500. Terms, \$1,000 cash, balance on mortgage. Address A. F. Barrott, 574 Main St., Owego, N. Y. Owner will rent for cash, on shares, or with option to buy.

TOWN OF OWEGO

Population 7,474

No. 943—Farm of 406 acres; 2 miles from Apalachin P. O. and railway station, on line of D. L. & W. R. R.; $\frac{1}{4}$ mile from school; 2 miles from churches, butter factory and milk station. Highways, soon will be macadamized road $\frac{1}{2}$ way. Nearest city, Binghamton, population about 50,000, 14 miles distant, reached by rail and highway. Surface, some rolling, mostly level. Soil, shaly and clay loam. Acres in natural pasture, 100; acres in timber, 300, oak, hemlock, pine and chestnut; acres tillable, 100. Fruit, a few apple, cherry and plum trees. Best adapted to hay, oats, corn, potatoes, buckwheat and wheat. Fences, wire and rail, poor condition. House, 18x30, $1\frac{1}{2}$ stories, poor condition. Outbuildings: barn, 30x40, poor condition; wagonhouse, fair condition. Watered by well, spring and creek. Susquehanna River is 1 mile from farm. Reason for selling, owner cannot work farm. Price, \$4,500. Terms, $\frac{1}{2}$ cash, balance to suit purchaser. If desired, owner will reserve sawing timber and leave wood and will then sell for \$2,500. Wood is worth about \$20 per acre. Owner will rent for cash or on shares. Address F. E. Boardman, Owego, N. Y.

No. 944—Farm of 45 acres; 1 mile south of Apalachin P. O. and railway station, on line of D. L. & W. R. R.; $\frac{1}{2}$ mile from school; 1 mile from Protestant churches; R. D. 1 from Apalachin. Roads in vicinity, good. Nearest large village, Owego, population,

4,500, 6 miles distant, reached by rail and highway. Occupied by owner. Surface, level and rolling. Soil, clay loam. Acres in meadow, 43; natural pasture, 2; timber, 1, oak and chestnut; acres tillable, 43. Fruit, 100 apple trees, 100 sour and sweet cherry trees, pears, plums, peaches and grapes. Best adapted to fruit, potatoes and other crops, but especially fruits. Fences, woven wire and rail. House, 16x24, with a 16x20 addition, good cellar, first-class condition. Outbuildings: barn, 30x40; barn, 16x20; barn, 16x32, with basements, in good condition; barns have new roofs; also new carpenter and blacksmith shops. Watered, house and barns, by well; fields, by springs. Forest Lake 20 rods from back end of farm. This farm is located in a good neighborhood with a pleasant view of the Susquehanna River. Telephone in house. Farm is in a fine state of cultivation. Reason for selling, poor health of owner. Price, \$2,500. Terms, \$1,000 cash, balance on time. Address Wm. W. Jewett, Apalachin, N. Y.

No. 945—Farm of 60 acres, located 2 miles from Apalachin P. O. and railway station, on line of D. L. & W. R. R.; $\frac{1}{2}$ mile from school; 2 miles from churches and milk station. Highways good. Nearest large village, Owego, 8 miles distant, reached by rail and highway. Surface of farm practically level. Soil, sandy loam. Acres in meadow, 19; in natural pasture, 2; in timber, 5, pine, hemlock and beech. Acres tillable, 55. Fruit, apples, cherries and grapes. Best adapted to corn, potatoes, oats, wheat and rye. Fences, principally barbed wire. House, 10 rooms, good condition, slate roof. Outbuildings, barn, 80x28; grainhouse, wagonhouse, storehouse, etc. Watered by well and springs. Occupied by owner. Reason for selling, ill health of owner. Price, \$5,000. Terms, $\frac{1}{2}$ down, balance on time. Address Geo. J. Sherwood, Apalachin, N. Y.

TOWN OF SPENCER

Population 1,529

No. 946—Farm of 234 acres; about 3 miles from Spencer P. O. and railway station, on line of L. V. R. R. and E. C. & N. R. R.; R. D.; 80 rods from school. Good soil. Acres in meadow, 50 to 60; tillable, 150 to 170; natural pasture, 30 to 40; timber, 15 to 20, hem-

lock, pine, beech, birch, maple, ash and basswood, second growth. About 75 fruit trees. Best adapted to oats, buckwheat, corn and potatoes. Fences, stump and wire, very good. House, 8 rooms, with summer kitchen, very good condition. Barn, 30x64, with basement and shed, in fair condition. Watered by well, springs and stream. A good dairy farm. Reason for selling, advanced age of owner. Price, \$5,000. Terms, \$2,000 to \$2,500 down and mortgage for remainder. Name and address of owner, Seymour Seely, Spencer, N. Y.

No. 947—Farm of 56 acres; 3 miles from Spencer P. O., R. D. 2; 3 miles from railway station at Spencer, on line of L. V. R. R.; $2\frac{1}{2}$ miles from Van Etten, on line of E. C. & Ct. R. R.; $\frac{1}{2}$ mile from school; 3 miles from churches, butter factory, milk station and milk condensing plant. Highways, good. Nearest large village, Waverly, 10 miles distant; nearest city, Elmira, 17 miles distant, reached by rail and highway. Surface of farm, a little rolling. Soil, gravelly loam. Acres in meadow, 15 to 20; in natural pasture, 10 to 12; in timber, 10 to 12, hard wood, beech, birch, maple, hemlock and pine; all tillable except timber land. Fruit, cherries, pears and apples, about 25 trees. Best adapted to oats, corn, buckwheat, wheat, rye and potatoes. Fences, wire, fair condition. House, 7 rooms, fair condition. Outbuildings: barn, 26x36, with basement; poultryhouse and other outbuildings; fair condition. Watered by spring and creek. Occupied by tenant. Reasons for selling, advanced age of owner. Price, \$1,400. Terms, $\frac{1}{2}$ cash, remainder on mortgage at 5% interest. Address Seymour Seely, Spencer, N. Y.

No. 948—Farm of 15 acres, located $1\frac{1}{2}$ miles from Spencer P. O., R. D. 1; 2 miles from railway station at Spencer, on line of L. V. R. R.; $\frac{1}{4}$ mile from school; 2 miles from churches, butter factory, cheese factory, milk station and milk condensing plant. Highways good. Surface of farm, slightly rolling. Soil, good black loam. Acres tillable, 15. Fruit, apples, pears, cherries, plums, grapes, quinces and plenty of small fruit. Best adapted to corn, hay, oats, buckwheat, truck gardening and poultry. Fences, wire, good condition. House, large, 8 rooms. Outbuildings, barn, 16x40, stalls for 4 horses and 3 cows, good condition. Watered, house by pump at kitchen door, fields by

springs. Occupied by tenant. Price, \$800. Terms, \$300 cash, balance on mortgage at 6%. Address Geo. Wallace, Fairport, N. Y., R. D. 1.

No. 949—Farm of 824 acres, located 3 miles from Spencer P. O. and railway station, on line of L. V. R. R.; $\frac{1}{4}$ mile from school; 3 miles from churches, milk shipping station and milk condensing plant. Highways, small hills but generally good. Nearest large village, Waverly, 8 miles distant, reached by rail and highway. Surface of farm level and hilly, Altitude 1,500 feet. Soil, good. Acres in meadow, 350; in natural pasture, 50; in timber, 424, hemlock, chestnut, ash and basswood. Acres tillable, 350. Fruit, apples, peaches and cherries. Best adapted to oats, buckwheat, wheat, hay, corn and rye. Fences, wire and stump, fair condition. House, 30x30, good condition, two smaller houses. Outbuildings, barn, 30x50, with addition, 24x30, basement and silo; barn, 28x56, with basement. Watered, house by well, barns by spring, fields by springs and creek. Occupied by tenant. Reason for selling, to close an estate. Price, \$15 per acre. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address The S. Alfred Seely Estate, Spencer, N. Y.

No. 950—Farm of 14 acres, located 1 mile from Spencer P. O., $\frac{3}{4}$ mile from railway station at Spencer, on line of L. V. R. R.; 1 mile from churches school, butter factory, milk station and milk condensing plant. Highways good. Nearest city, Ithaca, 18 miles distant, reached by rail. Surface of farm, slightly rolling. Soil, loam. Acres in meadow, 6. Acres tillable, 14. Fruit, apples, peaches, strawberries, pears, cherries and plums. Fences, wire, good condition. House, 7 rooms, good condition. Outbuildings, barn, 16x24; shed, 10x24; henhouse, fair condition. Watered by well, creek and spring. Occupied by owner. Reason for selling, owner wishes to go into other business. Price, \$1,600. Terms, \$1,100 cash, balance on mortgage at 6%. Address Wm. Stark, Van Etten, N. Y., Chemung County.

No. 951—Farm of 7 acres, located 1 mile from Spencer P. O., $\frac{3}{4}$ mile from railway station at Spencer, on line of L. V. R. R.; 1 mile from school, churches, milk station and milk condens-

ing plant. Highways good. Nearest city, Ithaca, 18 miles distant, reached by rail and highway. Surface of farm, slightly rolling. Soil, good. Acres in meadow, 6. All tillable. Fruit, apples, plums, cherries, peaches, pears, also currants and strawberries. Fences, wire, good condition. House, 7 rooms, good

condition. Outbuildings, barn, 16x24, addition, 10x24; henhouse, etc. Watered by well and creek. Occupied by owner. Reason for selling, owner wishes to go into other business. Price, \$1,300. Terms, \$800 cash, balance on mortgage. Address Wm. Stark, Van Etten, N. Y., R. D. 2.

TOMPKINS COUNTY

Area, 494 square miles. Population, 33,647. Annual precipitation, 38.28 inches. Annual mean temperature, 47.3°. Number of farms, 2,988. County seat, Ithaca.

This county is situated in the southwest central part of the state and comprises the southern part of Cayuga Lake, the head of which is near the middle of the county.

The surface is partly undulating and is diversified with hills and valleys. In the northern part of the county from a line running east from Ithaca the surface is gently undulating and level. The southern and eastern portions of the county are quite hilly, diversified with wide valleys and deep ravines. The soil of the entire county is mostly of a rich sandy and gravelly loam with deposits of black loam scattered over the northern part. About nine miles northwest of Ithaca is a cataract called Taughannock Falls, which has a perpendicular height of 190 feet. This is higher than Niagara Falls. Forests of pine, oak, ash, elm, beech, sugar maple, etc., cover a considerable portion of the county. Tully limestone, slate and sandstone are among the minerals of the county. The county ranks third in the production of salt.

Along the shores of Cayuga lake the grape industry is in a high state of development. Leading crops as reported were corn, 278,503 bushels; oats, 596,746 bushels; wheat, 144,917 bushels; buckwheat, 293,086 bushels; barley, 46,679 bushels; potatoes, 689,360 bushels; hay and forage, 88,527 tons. Of domestic animals there are reported: Dairy cows, 15,008; horses, 8,120; swine, 8,928; sheep, 19,644; poultry, 183,706. The total value of farm property is \$14,896,795, an increase of 17 per cent. over the census of 1900. The average price of improved farm land is \$42.82 per acre. The milk production was 8,059,296 gallons; total receipts from the sale of dairy products, \$732,549.

The county is intersected by the main line and three branches of the Lehigh Valley railroad and by a branch of the Delaware, Lackawanna and Western. Ithaca has a population of about 15,000 and is the home of Cornell University, one of the leading institutions in the country. The State Agricultural College is also located there. There are 152 district schools which with the academies and graded schools in villages furnish excellent educational facilities. The 35 milk stations and factories supply the needs of the farmers along dairy lines and the interest in farming and fruit raising is maintained by an ample number of agricultural organizations.

TOWN OF DANBY

Population 1,235

No. 952—Farm of 103 acres; 4 miles from the D. L. & W. R. R. and L. V. R. R.; R. D. from Ithaca. Highways, ordinary country roads, in fair condition. Soil, mostly gravelly loam, some black loam. Acres in meadow, 40; natural pasture, 24; timber, 7, second growth hard woods. Fruit, about 50 apple trees and a few cherry trees. Soil adapted to potatoes, oats, buckwheat, rye and hay. Fences, woven wire, in good condition. House, 1½ stories, 8 rooms, in good condition. Barns, 34x44, with good basement and hip roof; one, 30x40, and corn barn; all in good condition. Watered, house and

barns, by 125-foot well, with windmill; fields, by creek and spring. Cows, hogs, and poultry on the farm. Price, \$4,000. Terms, ½ cash, balance on easy terms. Owner would rather rent than sell. Will rent premises on shares, tenant to furnish team and tools. Name and address of owner, Holmes Hollister, Osborn Block, Ithaca, N. Y.

No. 953—Farm of 80 acres; 2 miles from Willseyville P. O., R. D. 1; 2 miles from railway station at Willseyville, on line of L. V. R. R.; and D. L. & W. R. R.; 1 mile from school and churches; 1½ miles from butter factory; 2 miles from milk station; 8 miles from milk condensing plant. Highways, some hills, but good. Nearest city, Ithaca, popula-

tion about 15,000, 11 miles distant, reached by rail and highway. Surface of farm, rolling. Altitude, about 1,500 feet. Soil, gravel. Acres in meadow, 11; in natural pasture, 15; in timber, 10, beech, maple and hemlock; acres tillable, 44. Fruit, apples, pears, plums, cherries, grapes and raspberries. Best adapted to corn, potatoes, oats and buckwheat. Fences, wire and rail, good condition. House, main part, 26x20, ell, 30x22, good condition. Barn, 30x70, shed attached, good condition. Watered by well and springs. Occupied by owner. Reason for selling, owner wants to engage in other business. Price, \$2,400. Terms, \$1,260 cash. Address Frederick E. Parker, Willseyville, N. Y. Owner will rent.

TOWN OF DRYDEN

Population 3,716

No. 954—Farm of 53 acres, located 5 miles from Freeville P. O., R. F. D., 2½ miles from railway station at Hagin, on line of L. V. R. R. and Auburn & Lansing R. R. Nearest large village, Freeville. Highways good. Soil, loam, not very stony. Acres in meadow, 40; in natural pasture, 5; in timber, 3. Acres tillable, 50. Fruit, 80 apple trees, 4 peach trees, also grapes, pears and plums. Best adapted to potatoes and grain. Occupied by tenant. Fences, board, wire and rail, good condition. House, 13 rooms, 2 stories, good condition. Basement barn. Watered by well and creek. Within 4 miles of Cayuga Lake. Price, \$3,000. Terms, \$1,000 down, balance on time. Address Geo. W. Wolcott, McLean, N. Y., Box 213.

TOWN OF ENFIELD

Population 1,000

No. 955—Farm of 102 acres; 2 miles from post office; 9½ miles from railway station at Trumansburg; ½ mile from school; 3 miles from churches. Highways, good. Soil, good. Some timber. Fruit, apple orchard. Adapted to any kind of crop. Fences, in fair condition. House, 8 rooms. 2 barns, in fair condition. Watered by well, creek and streams. Occupied by tenant. Reason for selling, owner lives elsewhere. Price, \$3,800. Terms, part cash, remainder on time. Address Sophia A. White, 58 Port Watson Street, Cortland, N. Y.

TOWN OF LANSING

Population 2,653

No. 956—Farm of 235 acres, located 3 miles from Ludlowville P. O., 2 miles

from railway station at Tarbell, on line of N. Y. A. & L. R. R.; 1 mile from school; 2 miles from church; 3 miles from butter factory. Highways good. Nearest city, Ithaca, 10 miles distant, reached by rail and highway. Surface of farm, nearly level, sloping little to west. Altitude, 900 feet. Soil, gravelly loam. Acres in meadow, 80; in natural pasture, 52; in timber, 70, beech, maple and basswood. Acres tillable, 64. Fruit, 180 trees. Fences, wire, board and rail, fair condition. House, 11 rooms, built 7 years ago. Outbuildings, barn, 30x40; barn, 80x36; barn, 80x24; barn, 16x24; also small tenant house with barn and log house used as work shop. Watered by well and spring. Occupied by tenant. Price, \$65 per acre. Terms, ½ cash. Address John R. Conklin, Groton, N. Y.

TOWN OF NEWFIELD

Population 1,509

No. 957—Farm of 100 acres; 4 miles from Newfield; R. D. Good loam soil. 50 acres in meadow. House, small, in good repair. Barn, rebuilt, 30x42, with basement; wagonhouse, 30x40, nearly new, all in good condition. Fences, in fair condition. Watered by spring and well. The owner has another farm of 151 acres, description same as above; both farms are well watered and the land is in a high state of cultivation. Owner will rent with option to buy. For information concerning price and terms, address E. D. Swartwood, Newfield, N. Y., R. D.

No. 958—Farm of 80 acres; 2 miles from Newfield. Good house and barn. Well watered. Price, \$1,800. Address Sophia A. White, 58 Port Watson Street, Cortland, N. Y.

No. 959—Farm of 50 acres; 6 miles from Newfield P. O., R. D. 30; 5½ miles from railway station at Swartwood, on line of L. V. R. R.; ¼ mile from school; 2½ miles from Protestant churches; 5½ miles from butter factory and milk station; 6 miles from cheese factory; 11 miles from milk condensing plant. Highways, good. Nearest city, Ithaca, population about 15,000, 14 miles distant, reached by rail and highway. Surface of farm, rolling. Soil, loam. Acres in meadow, 10; in natural pasture, 10; in timber, 7, beech, maple, pine, chestnut and hemlock; acres tillable, 44. Fruit, apples, pears, plums, cherries and peaches. Fences, board and rail, poor

condition. House, 24x16, 7 rooms, fair condition. Outbuildings: barn, 30x40, with basement, fair condition. Watered by well, creek and springs. This farm is 14 miles from Cayuga Lake. Occupied by owner. Price, \$1,200. Terms, $\frac{1}{2}$ cash, balance on long time. Owner will rent for cash or on shares. Address D. W. Stark, 114 Monroe Street, Ithaca, N. Y.

TOWN OF ULYSSES

Population 2,612

No. 960—Farm of 40 acres; 6 miles from Ithaca; post office at Willow Creek; $\frac{1}{2}$ mile from station, on line of L. V. R. R.; $\frac{1}{2}$ mile from school. Highways, good. Nearest large city, Ithaca,

population 15,000, distant 6 miles, reached by rail and highway. Occupied by owner and tenant. Surface, nearly level, somewhat rolling. Soil, sandy loam and clay. Acres in meadow, 15; natural pasture, 15; timber, 6, hard wood and part suitable for sawing. Best adapted to all grains, hay and potatoes. Fences, poor condition. No house. Barn, 26x70, good condition. Watered, barn and fields, by stream. Cayuga Lake, $\frac{1}{2}$ mile distant. Reason for selling, owner has other business. This farm would make an excellent place for all kinds of fruit, being near large markets. Address Holmes Hollister, 1 Osborn Block, Ithaca, N. Y. Owner will rent.

ULSTER COUNTY

Area, 1,150 square miles. Population, 11,769. Annual precipitation, 38.28 inches. Annual mean temperature, 46.3°. Number of farms, 5,022. County seat, Kingston.

This county is located in the eastern part of the state and is bounded on the east by the Hudson River. It is intersected by the Wallkill and Rondout Rivers and is drained by the Neversink and the Shawangunk Rivers and by Esopus Creek.

The surface is hilly and partly mountainous and is extensively covered with forests of hickory, oak, chestnut, elm, pine, sugar maple, hemlock, etc. The southern part is occupied by the Shawangunk Mountains and the northern part by the Catskill Mountains. There are several lakes, among which is Lake Mohawk, a popular summer resort. Devonian sandstone is found here in abundance and large quantities are quarried and shipped to New York City and other points by water. Extensive quantities of water lime are used in making Portland cement, an industry which exceeds a million dollars' in value annually. The soil is quite productive, especially in the valleys along the Hudson River and is mostly of a clay and gravelly loam; considerable limestone soil is also found. Crops reported are corn, 433,322 bushels; oats, 225,235 bushels; wheat, 24,627 bushels; buckwheat, 93,557 bushels; rye, 103,132 bushels; potatoes, 293,415 bushels; hay and forage, 90,285 tons. Along the Hudson River conditions are exceedingly favorable for the growing of small fruits and apples, pears, peaches, etc. This county ranks first in the production of small fruits and third in the production of grapes. The villages and cities of the county furnish large markets and New York City can be reached quickly and cheaply by way of the Hudson river. The valuation of all farm property is \$29,439,672, an increase of 16.7 per cent. over that of 1900. There is a large acreage offered for sale in this bulletin at a price below the agricultural value of the land. Domestic animals reported: Dairy cows, 23,065; horses, 9,724; swine, 14,843; sheep, 5,721; poultry, 265,195. Total production of milk, 10,702,160 gallons, and the total value of all dairy products is \$1,015,894. Excellent transportation facilities are found in this county and the markets are ample for everything that can be raised. The city of Kingston, the county seat, has a population of 25,908 and is located 85 miles from New York City and 55 miles from Albany. At New Paltz a state normal college is located. Two hundred and eighteen district schools and academies and graded schools in villages give ample educational advantages. There are 74 miles of state and county roads and 1,561 miles of other improved highways. Ulster county has 16 agricultural associations for the promotion of general farming and stock raising.

TOWN OF ESOPUS

Population 4,786

*No. 961—Farm of 60 acres, located $\frac{1}{2}$ mile from Fly Mountain P. O., $2\frac{1}{2}$ miles from railway station at Kingston, on

line of W. S. R. R.; $\frac{1}{8}$ mile from school; 1 mile from Catholic and Protestant churches; $2\frac{1}{2}$ miles from butter factory, cheese factory and milk station. Highways, good State roads. Surface of

* Farm is in hands of agent or real estate dealer.



FIG. 19.—HOUSE ON FARM 961, TOWN OF ESOPUS, ULSTER COUNTY.

farm, 20 acres level, balance rolling. Soil, sandy loam. Acres in meadow, 40; in natural pasture, 10; in timber, 10, oak, chestnut and hickory. Acres tillable, 40. Fruit, apples, pears, etc. Best adapted to hay, oats, corn, rye and gardening. Fences, wire and stone. House, 8 rooms, good condition. Barn and outbuildings in good condition. Watered, house by well and cistern, barns by brook, fields by springs and brook. Occupied by owner. Reason for selling, advanced age of owner. Price, \$7,500. Terms, part down, balance may remain on mortgage. Address The Hudson River & Catskill Mountain Land Agency, Kingston, N. Y.

TOWN OF GARDINER

Population 2,779

No. 962—Farm of 151 acres, located 3 miles west of New Paltz, on line of Walkill Valley R. R.; $\frac{1}{2}$ mile from school; 3 miles from churches, milk station and milk condensing plant. Highways good. Surface of farm, mostly level. Acres in meadow, 5; in natural pasture, 16; in timber, 10. Acres tillable, 120. Fruit, 3 acres of apples. Best adapted to general farming. Fences, wire and stone wall, good. House, 62x25, $2\frac{1}{2}$ stories, 14 rooms, tenant house, 2 stories, 4 rooms. Outbuildings, barn, 143x30. Watered by well, cistern and spring. Occupied by tenant. Price, \$37 per acre. Terms, $\frac{2}{3}$ down, balance on mortgage at 5%. Address Henry L. Rymph, Poughkeepsie, N. Y., R. F. D.

No. 963—Farm of 175 acres, located 3 miles west of New Paltz, on line of Walkill Valley R. R.; 1 mile from school; 3 miles from milk station, Catholic and Protestant churches. Highways good. Surface of farm mostly level. Soil, clay loam. Acres in meadow, 10; in natural pasture, 21; in timber, 10. Acres tillable, 128. Some fruit. Best adapted to general farming. Fences, stone wall and wire. House, large, 12 rooms, nearly new. Outbuildings, barn, 45x45, lean-to attached, 30x40, accommodate 50 head of stock, granary, wagonhouse and henhouse, all in first-class condition. Watered, house by well and cistern, barns by well, fields by stream. Occupied by tenant. Reason for selling, owner in other business. Price, \$36 per acre. Terms, $\frac{2}{3}$ down, balance on bond and

mortgage at 5%. Address Henry L. Rymph, Poughkeepsie, N. Y., R. F. D.

No. 964—Farm of 286 acres, located 3 miles west of New Paltz, on line of Walkill Valley R. R.; 1 mile from school; 3 miles from milk station, Catholic and Protestant churches. Highways good. Surface of farm rolling. Soil, limestone, good for alfalfa. Acres in meadow, 35; in natural pasture, 50; in timber, 41, mostly chestnut. Acres tillable, 160. Some fruit. Best adapted to grass, grain and general farming. Fences, post, wire and stone wall, good condition. House, $1\frac{1}{2}$ stories with basement, 7 rooms, good condition. Outbuildings, barn, 30x40, with shed attached, 20x40, and other outbuildings, all in good condition. Watered by well and stream. Occupied by tenant. Price, \$15 per acre. Terms, $\frac{2}{3}$ down, balance on mortgage. Address Henry L. Rymph, Poughkeepsie, N. Y., R. F. D.

TOWN OF HARDENBURG

Population 598

No. 965—Farm of 255 acres; 2 miles from Lew Beach P. O.; mail delivered daily $\frac{1}{4}$ mile from house; 11 miles from station at Livingston Manor, on line of the N. Y., O. & W. R. R.; $\frac{3}{4}$ mile from school; 2 miles from Presbyterian and Methodist churches. Highways, fair but hilly. Nearest villages, Shavertown, 8 miles distant, and Livingston Manor, population of 800, distant 11 miles by highway. Surface, rolling. Soil, red slate, clay and loam, mixed. 80 acres of meadow; 90 acres of pasture; 85 acres of brush and timber, hemlock, hard wood, etc.; about 130 acres tillable. Large apple orchard and a few pear trees. Maple orchard of about 400 trees. Land adapted to raising of oats, rye, buckwheat, potatoes, and to dairying. Fences of stone, wire and wood, in fair condition. $1\frac{1}{2}$ -story house, 9 rooms, in fair condition. Barn, 26x48, with annex, 14x48; wagonhouse, 24x26, with annex, 26x36; granary; henhouse; hogpen; saphouse, in fair condition. House and barns are watered by springs; fields have springs and a trout stream. The Beaverkill River is $\frac{1}{4}$ mile; Lake Marion, 1 mile; Mountain Lake, 2 miles distant. This place is in vicinity of large summer boarding houses and country homes of city people. A good dairy, sheep and poultry farm, with good markets. Occupied by owner.

Reason for selling, owner is lame. Price and terms given on application to owner. Will rent with option to buy to desirable parties. Address Byron Barnhart, Lew Beach, Sullivan Co., N. Y.

No. 966—Farm of 150 acres; $1\frac{1}{2}$ miles from Seager P. O.; 8 miles from railway station at Arkville, on line of U. & D. R. R.; 2 miles from school and churches; 8 miles from butter and cheese factory, milk station and condensing plant. Highways, good, some hilly. Nearest large village, Margaretville, population 1,000, 9 miles distant, reached by highway and rail. Surface, rolling and level. Soil, sandy loam and clay loam. Acres in meadow, 50; in natural pasture, 40; in timber, 60; hemlock, maple, beech, oak, etc.; acres tillable, 150. 100 fruit trees. Best adapted to corn, potatoes, buckwheat, oats, etc. Fences, in fair condition. House, 26x34, in fair condition. Two medium-sized barns, in need of some repairs. Watered by spring. Occupied by tenant. Reason for selling, death of former owner. Price, \$2,000. Terms, cash, or easy terms on good security. Owner will rent by the year after March 1. Address John E. Haynes, Seager, N. Y.

No. 967—Farm of 168 acres; located $\frac{1}{2}$ mile from Seager P. O.; $5\frac{1}{2}$ miles from railway station at Fleischmann's on line of U. & D. Ry.; $\frac{3}{4}$ mile from school, $2\frac{1}{2}$ miles from Protestant churches, 6 miles from butter factory, cheese factory and milk station. Highways, good. Nearest large village, Margaretville, $8\frac{1}{2}$ miles distant, reached by highway. Surface of farm hilly. Altitude, 2,000 feet. Soil, clay loam. Acres in meadow, 20; in natural pasture, 20; in timber, 128, hemlock, beech, birch, basswood and maple. All tillable except woodland. Fruit, apples and plums. Best adapted to buckwheat, oats, rye, potatoes, timothy, red clover, cauliflower, etc. Fences, mostly stone and wire, some in fair condition and some poor. House, 24x32, good condition. Outbuildings: barn, 26x36, fair condition, milk house, 12x16, and henhouse in fair condition. Watered by springs. Occupied by owner. Reason for selling, advanced age of owner. Price, \$1,500. Terms, $\frac{1}{2}$ down, balance on easy terms. Address Walter Kittle, Seager, Ulster Co., N. Y.

No. 968—Farm of 70 acres; located $\frac{1}{2}$ mile from Seager P. O., $5\frac{1}{2}$ miles from

railway station at Fleischmann's on line of U. & D. Ry.; 1 mile from school, $2\frac{1}{2}$ miles from Protestant churches, 6 miles from cheese factory and milk station, 8 miles from butter factory. Highways, good. Nearest large village, Margaretville, $8\frac{1}{2}$ miles distant, reached by highway. Surface of farm, slightly rolling. Altitude, 2,000 feet. Soil, clay loam. Acres in meadow, 23; in natural pasture, 23; in timber, 24, maple, beech, birch and basswood. All tillable except timber land. Fruit, apples, pears, plums and cherries. Best adapted to buckwheat, oats, corn, potatoes, timothy and clover. Fences, stone, good condition. House, 24x30, fair condition. Outbuildings: barn, 30x60, fair condition. Watered by spring and brook. Occupied by tenant. Reason for selling, owner a woman and cannot attend to it. Price, \$2,000. Terms, \$800 down, balance on mortgage. Address Mary LaMoure, Seager, N. Y.

No. 969—Farm of 116 acres; located $\frac{1}{4}$ mile from Seager P. O.; $4\frac{1}{2}$ miles from railway station at Fleischmann's on line of U. & D. Ry.; 50 yards from school, 2 miles from Protestant churches, $6\frac{1}{2}$ miles from butter factory, $5\frac{1}{2}$ miles from cheese factory and milk station. Nearest large village, Margaretville, 8 miles distant, reached by highway. Surface of farm, slightly sloping. Altitude, 1,800 feet. Soil, clay loam. Acres in meadow, 45; in natural pasture, 40; in timber, 31, hemlock, maple, beech and birch. All tillable except woodland. Fruit, apples, pears, cherries and plums. Best adapted to oats, buckwheat, corn, potatoes, rye, wheat, alfalfa, timothy, etc. Outbuildings: barn, 32x50, barn, 30x36, fair condition, ice house, 16x20, milk house, 14x18, fair condition and tenant house, 20x30. Watered, house and barn by running water, fields by springs and streams. Occupied by owner. Reason for selling, owner has other business. Price, \$5,500. Terms, \$2,000 cash, balance on easy terms. Address J. E. Haynes, Seager, Ulster Co., N. Y.

TOWN OF HURLEY

Population 1,677

No. 970—Farm of 120 acres; located 2 miles from village of Woodstock, 2 miles from railway station, on line of U. & D. Ry.; $1\frac{1}{2}$ miles from school, 2 miles from churches. Highways in good condition. Nearest city, Kingston, 9

miles distant, reached by rail and highway. Surface of farm level. Altitude, about 800 feet. Soil, loam. Acres in meadow, 60; in natural pasture, 15; in timber, 40, mostly pine. Acres tillable, 80. Fruit, apples. Best adapted to hay and grain. Fences, stone walls and wire, fair condition. House, 2 stories, 12 rooms, good condition. Outbuildings, two large barns, carriage house, granary, poultry house and other small buildings. Watered by well, windmill attached and springs. Occupied by owner. This farm is 2 miles from Overlook mountain. Reason for selling, owner a woman and cannot attend to farm. Price, \$5,000. Address Mrs. Hattie Van Etten, Woodstock, Ulster Co., N. Y., Box 7.

TOWN OF LLOYD

Population 2,803

No. 971—Farm of 140 acres; 3 miles from railway station at Lloyd, on line of C. N. E. R. R.; $\frac{1}{2}$ mile from school and church; 5 miles from butter factory and milk station; R. D. Highways, good. Nearest large village, New Paltz, population about 1,200, 5 miles reached by highway and trolley. Surface of farm, rolling, level and hilly. Altitude, 500 feet. Acres in meadow, 80; in natural pasture, 40; in timber, 20, chestnut, oak, etc.; acres tillable, 100. Fruit, 300 apple, 100 peach, 15 plum, 18 cherry and 2 quince trees, 2,000 grapevines, about 2,200 dewberry bushes and 800 currant bushes. Best adapted to corn, rye, oats, potatoes and fruit. Fences, wire, stone and rail, fair condition. House, 15 rooms, good condition. Outbuildings: large barn. 40x36; 2 hayhouses, 18x30; granary; press barn and wagonhouse; hoghouse and woodshed. Watered, house and barns, by running spring water; fields, by springs. $1\frac{1}{2}$ miles from small lake. Occupied by owner. Reason for selling, to close an estate. Price, \$6,000. Terms, \$4,000 down, remainder on mortgage. Address Eugene Relyea, Highland, N. Y.

*No. 972—Farm of 68 acres; $2\frac{1}{2}$ miles from Highland P. O.; 3 miles from railway station at Highland, on line of W. S. R. R.; $\frac{1}{8}$ mile from school; $2\frac{1}{2}$ miles from churches, butter factory, cheese factory, milk station and milk condensing plant. Highways, good, State road. Adapted to fruit and dairying. Acres in meadow, 8; in timber,

12, chestnut, etc. Fruit, apples, pears, berries, 1,000 grapevines. Fences, fair condition. House, 12 rooms, fair condition. Good barn. Watered, house, by cistern; barn, by wells; fields, by stream. This farm is $\frac{1}{8}$ mile from Hudson river. Occupied by owner. Reason for selling, owner in other business. All stock and implements are included in price. Price, \$5,900. Terms, $\frac{1}{2}$ cash. Address Edgar Elmendorf, agent, Highland, N. Y.

*No. 973—Farm of 117 acres; 4 miles from New Paltz, on line of N. Y., N. H. & H. R. R.; $\frac{1}{8}$ mile from school; 2 miles from churches, butter factory, cheese factory, milk station and milk condensing plant. Highways, good. Surface of farm, mostly level. $\frac{2}{3}$ of farm tillable. Fruit, apple orchard, some grapes. Best adapted to general farming and dairying. House, 16 rooms, porch, good condition. Barn, 90 feet long; silo; ice-house. Running spring water to house and barns. Occupied by tenant. Reason for selling, owner wishes to retire. Price, \$7,400. Terms, moderate. Owner will rent with option to buy. Address Edgar Elmendorf, Highland, N. Y.

*No. 974—Farm of 20 acres; $2\frac{1}{2}$ miles from Highland P. O. and railway station, on line of N. Y. C. & H. R. R.; $\frac{1}{8}$ mile from school; $2\frac{1}{2}$ miles from churches; 2 miles from butter factory, cheese factory, milk station and local markets. Altitude, 600 feet. All tillable. Fruit, 1,000 grapevines, berries, pears, etc. Best adapted to small fruit. Fences, good wire. House, 10 rooms, and porch. Outbuildings: moderate-sized barn, fair condition. Watered, house, by running spring; barn, by well. Hudson river near farm. Occupied by owner. Reason for selling, owner has other property. Price, \$6,300. Terms, part cash. Address Edgar Elmendorf, agent, Highland, N. Y.

*No. 975—Farm of 66 acres; $1\frac{1}{2}$ miles from Highland P. O. and railway station, on line of N. Y. C. & H. R. R.; $\frac{1}{4}$ mile from school; $1\frac{1}{2}$ miles from churches. Highways, State road. Acres in meadow, 17; all tillable. Fruit, 700 peach trees, currants, grapes, berries and one apple orchard. Best adapted to fruit, poultry and cattle. Fences, in good condition. House, 7 rooms, fair

* Farm is in hands of agent or real estate dealer.

condition. Barn, in good condition. Watered by artesian well. Hudson River, 1 mile from farm. Occupied by owner. Reason for selling, owner has another farm. Price, \$8,000. Terms, part cash. Price includes farm implements. Address Edgar Elmendorf, agent, Highland, N. Y.

TOWN OF MARBLETOWN

Population 4,713

*No. 976—Farm of 110 acres, located $\frac{1}{2}$ mile from High Falls P. O., $1\frac{1}{2}$ miles from railway station at High Falls, on line of O. & W. Ry., $\frac{1}{2}$ mile from school and Protestant churches, $1\frac{1}{2}$ miles from milk station. Highways, State road. Surface of farm, greater part level. Altitude, 600 feet. Soil, good for fruit. Acres in meadow, 85, in natural pasture, 25. Acres tillable, 85. Fruit, apples, peaches and other choice fruit. Fences, wire and stone. House, 9 rooms, good condition. Outbuildings in poor condition. Watered, house and barn by well, fields by brook. Occupied by owner. Reason for selling, ill-health of owner. Price, \$3,600. Terms, $\frac{1}{2}$ cash. Address The Catskill Mountain and Hudson River Land Agency, Kingston, N. Y.

*No. 977—Farm of 43 acres; located 1 mile from Stone Ridge P. O., $2\frac{1}{2}$ miles from railway station at High Falls, on line of O. & W. Ry.; 1 mile from school and churches. Highways in good condition. Nearest city, Kingston, 14 miles distant, reached by rail and highway. Surface of farm, gently rolling. Altitude, 300 feet. Soil, gravelly loam. Acres in meadow, 20; in natural pasture, 10; in timber, 13, oak and chestnut. Acres tillable, 30. Fruit, 50 apple trees. Best adapted to rye, corn, vegetables and fruit. Fences, wire, good condition. House, 7 rooms, large, good condition. Outbuildings: large and in good condition. Watered, house by well, barns and fields by spring. Occupied by owner. Reason for selling, advanced age of owner. Price, \$3,200. Terms, $\frac{1}{2}$ cash. Address The Catskill Mountain & Hudson River Land Agency, Kingston, N. Y.

*No. 978—Farm of 137 acres; located $\frac{1}{4}$ mile from Cottekill P. O.; $\frac{1}{4}$ mile from Cottekill railway station, on line of O. & W. Ry.; $\frac{1}{2}$ mile from school and churches, 2 miles from Catholic church, $\frac{1}{2}$ mile from milk station. High-

ways in good condition. Nearest city, Kingston, 8 miles distant, reached by rail and highway. Surface of farm, level. Altitude, 250 feet. Soil, loam. Acres in meadow, 100; in natural pasture, 30; in timber, 7, oak and chestnut. Acres tillable, 100. Fruit, apple orchard. Best adapted to corn, hay, oats, potatoes, rye and wheat. Fences, wire and stone. House, large, 10 rooms. Outbuildings: large barn and other outbuildings necessary for size of farm. Watered, house and barn by well, fields by spring. Occupied by owner. Reason for selling, to close an estate. Price, \$10,000. Terms, $\frac{1}{2}$ cash. Address the Catskill Mountain & Hudson River Land Agency, Kingston, N. Y.

TOWN OF MARLBOROUGH

Population 3,841

*No. 979—Farm of 176 acres; 2 miles from Milton P. O.; 3 miles from railway station at Milton or Highland, on line of W. S. R. R.; 1 mile from school; 2 miles from churches and milk station; 3 miles from butter factory. Highways, good. About \$1,500 worth of timber on farm. Acres tillable, 110. Fruit, large quantities of grapes, some peaches. Best adapted to fruit and general farming. Wall fences. House, 10 rooms, porch, good condition. Outbuildings, 2 barns, large, one new. Watered by well and cistern. Farm is located $2\frac{1}{2}$ miles from Hudson river. Occupied by owner. Reason for selling, advanced age of owner. Will sell $\frac{1}{2}$ of farm for \$5,000. Price for entire farm, \$7,500. Terms, part cash. Address Edgar Elmendorf, agent, Highland, N. Y.

TOWN OF NEW PALTZ

Population 3,025

No. 980—Farm of 125 acres; $2\frac{1}{2}$ miles from New Paltz. Good soil, adapted to fruit and vegetables. 13 acres of timber; 80 acres of meadow; 15 acres of fruit; 20 acres pasture. 5 miles from Lake Mohonk. Large house, 14 rooms, nearly new. Modern improvements. 3 good barns, 2 hen-houses and other outbuildings, all in good condition. Running water through house. Bath. Fire protection. Price, \$8,000. Terms, part cash. Address D. W. Corwin, New Paltz, N. Y., R. D. 2.

No. 981—Farm of 180 acres; 3 miles from New Paltz P. O.; 3 miles from

* Farm is in hands of agent or real estate dealer.



FIG. 20.— HOUSE ON FARM 976, TOWN OF MARBLETOWN, ULSTER COUNTY.



FIG. 21.— HOUSE ON FARM 978, TOWN OF MARBLETOWN, ULSTER COUNTY.

railway station at New Paltz, on line of W. V. R. R.; 1 mile from school, churches and milk station. Highways, good, state road. Nearest city, Kingston, population 25,000, 12 miles distant. Surface, rolling. This is a dairy and hay farm. House in good condition; also the barn. Reason for selling, owner lives elsewhere. Price, \$5,000. Terms, $\frac{1}{2}$ cash. Address Dr. F. H. Greene, Poughkeepsie, N. Y.

TOWN OF PLATTEKILL

Population 1,879

No. 982—Farm of 74 acres; 3 miles from railway station at Modena, on line of C. N. E. R. R.; R. D. 2 from Gardiner; $\frac{1}{2}$ mile from school; 3 miles from churches and milk station; 6 miles from milk condensing plant. State road. Nearest city, Newburg, population about 28,000, 11 miles distant, reached by highway. Surface of farm, rolling. Soil, loam. Acres in meadow, 12; in natural pasture, 8; in timber, 17; acres tillable, 30. Fruit, apples, pears, cherries, etc. Adapted to general farming. Fences, stone and wire. House, 26x34, fair condition. Barn, in fair condition. Watered, house and barn, by well; fields, by spring and brook. Marlboro Mountains, 1 mile east of farm. Occupied by owner. Reason for selling, owner cannot cultivate farm. Price, \$3,500. Terms, \$2,000 down, balance on bond and mortgage. Address Lizzie Brown, Gardiner, N. Y., R. D. 2.

No. 983—Farm of 101 $\frac{1}{2}$ acres; located 3 miles from railway station at Modena, on line of C. R. N. E. Ry.; R. D. 2 from Gardiner, 1 mile from school, $\frac{1}{2}$ mile from Protestant church, $\frac{3}{4}$ mile from milk station. Highways, state road. Nearest city, Newburg, 10 miles distant, reached by highway. Surface of farm rolling. Soil, loam, good. Acres in meadow, 10; in natural pasture, 10; in timber, 4, oak, chestnut, locust and maple. Acres tillable, 75. Fruit, 300 apple, 100 pear trees, also plums and cherries. Best adapted to fruit and general farming. Fences, stone and wire, good condition. House, large, 13 rooms, first-class condition. Outbuildings: large barns, granary, wagonhouse, hoghouse, henhouse, woodhouse and shop, good condition. Watered, house by well and cistern, barns by well, fields by springs and brooks. Occupied by

owner. Reason for selling, owner desires to engage in other business. Price, \$9,000. Terms, \$5,000 cash, balance on bond and mortgage. Address W. S. Hartshorn, Plattekill, N. Y., or Gardiner, N. Y., R. F. D. 2.

TOWN OF ROCHESTER

Population 2,760

No. 984—Farm of 143 acres; 3 miles from Mombaccus P. O.; 6 $\frac{1}{2}$ miles from railway station at Kerhonksen, on line of O. & W. R. R.; 1 $\frac{3}{4}$ miles from school; $\frac{3}{4}$ mile from church; 6 $\frac{1}{2}$ miles from milk station. Highways, hilly, but good. Nearest city, Kingston, population 25,000, 26 miles distant, reached by rail. Surface, part level and part hilly. Soil, mostly gravelly loam. Acres in meadow, 20; in orchard and natural pasture, 65; in timber, 58, chestnut, hickory and oak; acres tillable, 85. Fruit, about 375 trees, mostly apple. Best adapted to hay and fruit. Fences, wire and stone wall, in good condition. House, 24x38, wings, 15x31, and 10x12, in good condition. Barn, 28x70, with large shed and stable attached; carriagehouse, 22x26; all in good condition. Watered by well and spring. Fine sites for 3 small fish ponds, never-failing spring. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$4,000. Terms, $\frac{1}{2}$ cash, balance on mortgage at 5%. Address H. D. & S. E. Brodhead, Kerhonksen, N. Y.

*No. 985—Farm of 225 acres; located 2 miles from Kyserike P. O. and railway station, on line of O. & W. Ry.; $\frac{1}{2}$ mile from school, Catholic and Protestant churches, 2 miles from butter factory and milk station. Highways, good country roads. Nearest city, Kingston, 14 miles distant, reached by rail. Surface of farm, nearly level. Altitude, 400 feet. Soil, rich loam. Acres in meadow, 200; in natural pasture, 10; in timber, 15, all kinds of native trees. Acres tillable, 200. Fruit, apples. Best adapted to hay and grain. Fences, wire and wood, good condition. House, 12 rooms, good condition. Outbuildings large and in best of repair. Watered, house and barn by wells, fields by stream. Occupied by owner. Reason for selling, advanced age of owner. Price, \$12,000. Terms, easy. Address The Catskill Mountain & Hudson River Land Agency, Kingston, N. Y.

* Farm is in hands of agent or real estate dealer.

TOWN OF SAUGERTIES

Population 9,632

No. 986—Farm of 100 acres; 2 miles from West Camp P. O. and railway station, on line of W. S. R. R.; $\frac{1}{8}$ mile from school; 1 mile from Reformed church; 2 miles from Lutheran church; 40 rods from Methodist church; R. D. 1 from Saugerties. Highways, good. Nearest village, Saugerties, population 4,000, distant 4 miles, reached by rail and highway. Occupied by tenant. Surface, rolling and level. Soil, meadow clay loam, highland fine soil but stony. Acres in meadow, 45; natural pasture, 10; timber, 5, oak, hemlock, cedar, maple, etc.; acres tillable, 90. Fruit, 200 apple trees and a few pear trees and other small fruit. Best adapted to hay, corn, rye and other grains. Fences, wire, wood and stone, in poor condition. House, 12 rooms and closets, good condition; tenant house, 7 rooms, good condition. Outbuildings: main barn, 50x50, good condition; woodhouse and shop; carriagehouse; granary; icehouse; and other small buildings; all in good condition. Watered, house and barns, by well and cistern; fields, by springs. $2\frac{1}{2}$ miles from Hudson river; Kaaterskill creek, $\frac{3}{4}$ mile distant. This place is easy of access from all points, both by boat and rail. 8 miles from Catskill on the old Kings road, pleasantly situated in a most excellent neighborhood. Price and terms, on application. Reason for selling, to settle an estate. Address Dr. R. Crawford, Saugerties, N. Y.

No. 987—A tract of land of about 40 acres; 8 miles from Kingston, population 25,000; 6 miles from Saugerties, population 4,000; $4\frac{1}{2}$ miles from railway station at Saugerties, on line of W. S. R. R.; $3\frac{1}{2}$ miles, state road, 1 mile tram road, good; 3-hour ride by rail from New York City; $2\frac{1}{2}$ miles from railway station at Mt. Marion, on line of W. S. R. R.; 15-minute walk from school; R. D. Situated midway between the Catskill Mountains and the Hudson river, on an elevation which brings it in full view of the Catskills and other points of interest in the Hudson Highlands. This property is easily reached by rail or highway and is suitable for a summer residence or for a group of cottages for summer homes, or for the country seat of a city man who desires a place of rare natural beauty and healthfulness. The entire place is

well covered with a growth of fine timber of different kinds, arranged naturally in groves and of sufficient quantity, for the construction of such rustic buildings as would be desired. In addition to this there is a large quantity of blue sandstone which has been quarried, from which could be constructed foundations or first stories of bungalows or cottages. There is, almost in the center of the property, an open meadow field, comparatively level and free from brush on which could be raised an abundance of hay and vegetables for use, or pleasure grounds could be constructed here. The advantages of this property for a summer home or country seat must be seen to be appreciated. Several never-failing springs furnish an abundant supply of the purest water. There is a stream of considerable size close to the border of the property from which, by hydraulic force, water could be distributed over the premises to any point desired, at a very low cost. The road leading to this property is a state road, fine condition. The new park which has just been laid out in the foothills of the Catskill Mountains will be but a short distance from these premises. There are no buildings on the property. Reason for selling, owner has other business and lives too far away to look after property. Price, \$1,000. Terms, \$500 down, balance on mortgage at $4\frac{1}{2}\%$. Address Miss M. D. Wickham, 476 Yates street, Albany, N. Y. Owner will rent the whole or any part of this property for camping sites.

No. 988—Farm of 50 acres; 1 mile from Saxton P. O.; 6 miles from Saugerties. Soil, good and well adapted to grass, grain and vegetables. Large deposits of bluestone quarries now being opened; a rare opportunity for some city contractor to secure the same as a valuable investment. House, good size, needs repair. Large barn and shed, in fair condition. Watered by springs and stream. Fences, fair. Will include wood lot of 8 acres and sell all for \$1,500. Terms, cash. Address H. B. Lasher & Bros., Quarryville, N. Y.

No. 989—Place of about $\frac{1}{3}$ acre; $\frac{1}{4}$ mile from Malden-on-Hudson P. O.; $\frac{1}{8}$ mile from railway station at Malden, on line of W. S. R. R.; 2-minute walk from school; 2 miles from high school; $\frac{1}{8}$ mile from church. Highways, good.

Nearest large village, Saugerties, population about 4,000, 2 miles distant, reached by rail, boat and stage; city of Kingston, 10 miles distant, reached by rail and highway; Catskill, 10 miles distant, reached by rail and highway; about 3 hours' ride by rail from New York. Also night boat to New York. Surface, rolling. Soil, good for gardening. Fruit, pears, plums, apples and grapes. Fences, smooth wire. House, 5 rooms, attic and cellar, fair condition. Outbuildings: chickenhouse; coal and woodhouse; fair condition. Watered by well and cistern. Catskill Mountains, 8 miles distant; Hudson river, $\frac{1}{8}$ mile distant; both river and mountains can be seen from house. Grocery store and hotel accommodating summer boarders about 3-minutes walk from house. The village of Malden, in which this property is located, has a population of about 700. Reason for selling, owner lives in another part of State. Price, \$900. Terms, cash. Address David M. Lewis, 473 Yates St., Albany, N. Y.

*No. 990—Farm of 7 acres; $\frac{1}{2}$ mile from West Camp P. O. and railway station, on line of W. S. R. R.; $\frac{1}{4}$ mile from school; $\frac{1}{2}$ mile from Lutheran church; 2 miles from milk station. Highways, good. Nearest large village, Saugerties, population about 4,000, 3 miles distant, reached by rail, highway and boat. Surface of farm, rolling. Altitude, 100 feet above Hudson river. Soil, clay loam, fertile. Acres in meadow, 4; in timber, $\frac{1}{2}$, oak, maple, hickory and black walnut; acres tillable, 6. Fruit, about 40 trees, apples, pears, peaches, plums, cherries and quinces. Best adapted to fruit, hay, grain and poultry. Fences, woven wire, stone wall and rail, poor condition. House, 5 rooms, good condition. Outbuildings: new barn, 22x20, with basement, capacity, 4 head. Watered by spring and brook. Hudson river about 1,000 feet distant from farm. This farm is rectangular in shape and easy to cultivate. It is well drained. There is a brook along the eastern boundary fed by 7 springs and never runs dry. One of these springs is on the farm and furnishes the supply of pure, clear water. The brook is very convenient for watering stock and for keeping poultry and ducks. A small dam could be built which would give sufficient power to pump water to any part of

the farm. It would also make a nice artificial pond stocked with fish. The fruit trees are all bearing. Soil is deep and rich and with proper cultivation will produce enough to pay for itself in 3 years. Barn will hold about 10 tons of hay and has space for wagons. Steamboat landing nearby. Reason for selling, owner wants to go to Europe. Price, \$1,500. Terms, \$950 cash, balance on mortgage at 6%. Address N. D. Rand, agent, West Camp, N. Y. Owner will rent.

No. 991—Place of 10 acres; $\frac{1}{4}$ mile from West Camp P. O. and railway station, on line of W. S. R. R.; $\frac{1}{4}$ mile from school and church; $1\frac{1}{2}$ miles from butter factory. Nearest large villages, Saugerties, population about 4,000, $3\frac{1}{2}$ miles distant, reached by rail and highway, and Catskill, population about 5,000, 8 miles, reached by rail and highway. Surface of farm, rolling, with high rock ridge overlooking Hudson river. Altitude, about 300 feet. Soil, gravelly and clay loam. Acres in meadow, 3; in natural pasture, 1; in timber, $\frac{1}{4}$, cedar grove; acres tillable, 8. Fruit, 60 apple trees, $\frac{1}{4}$ acre of Concord grapes, besides cherries and plums. Adapted to all kinds of vegetables, grains, alfalfa and small fruits. Fences, stone, wire and wood, fair condition. House, 8 rooms, 18x32, outside summer kitchen, 12x14, house has new cedar shingling. Outbuildings: barn, 26x30, with ell, 18x22, shed, wagonhouse, 12x18; and hoghouse, 12x12. Watered, house by never-failing spring and cistern; fields by spring near center of farm. This farm is a short distance from Hudson river, about 10 minutes' walk. Catskill Mountains are about 8 miles from farm; Kaaterskill and Old Mountain House in view. This would make a good poultry farm. Occupied by tenant. Reason for selling, owner has other business. Price, \$2,500. Terms, \$1,500 cash, balance on time or will sell on contract. Address E. F. Youngs, West Camp, N. Y., Box 25.

No. 992—Country place of about $\frac{1}{2}$ acre, located 30 rods from Glasco P. O.; 2 miles from railway station at Mt. Marion and about 4 miles from railway station at Saugerties on line of West Shore Ry.; 12 rods from school, Methodist church next door. Highways, good. Nearest large city, Kingston, 10 miles

* Farm is in hands of agent or real estate dealer.

distant, population about 25,000; nearest large village, Saugerties, population about 4,000, reached by rail and highway. Surface level. Soil, sandy, all tillable. Fruit, 8 apple trees, 6 pear trees, 12 peach trees, 2 cherry trees; also grapes and currants. Best adapted to garden vegetables. Fences, shrub fence in front; line fence, net wire. House, brick, large, 2 stories, 12 rooms, good condition, large piazza. Outbuildings: barn, large, will accommodate 6 horses and outfits; shed, wagonhouse and henhouse. Watered by well and cistern. Five minutes' walk from house to Hudson river; Catskill mountains 12 miles distant. Occupied by owner. Reason for selling, owner wishes to move elsewhere. This property is situated on a corner in the center of the village of Glasco, which has a population of about 1,500 and would be a very pleasant place for a summer home or boarding house, having large lawns, etc. About 100 miles from New York City. Price, \$3,500; terms, $\frac{1}{2}$ cash. Address Peter J. Turck, Glasco, Ulster Co., N. Y.

*No. 993—Farm of 155 acres located 6 miles from Kingston P. O.; 3 miles from railway station at Katrine, on line of W. S. Ry.; $\frac{1}{8}$ mile from school and churches, 6 miles from butter factory, cheese factory and milk station. Highways, state road. Surface of farm, gently rolling. Altitude, 200 feet. Soil, rich loam. Acres in meadow, 75; in natural pasture, 25; in timber, 55, second growth. Acres tillable, 75. Fruit, 500 apple, 300 pear and 400 peach trees. Best adapted to hay, corn, wheat, oats, celery and vegetables. Fences, wire, good condition. House, 14 rooms, colonial style. Outbuildings: large barns and outbuildings, fair condition. Watered, house and barn by well, fields by springs and brook. Occupied by owner. Reason for selling, to close an estate. Price, \$15,000. Terms, cash. Address The Catskill Mountain & Hudson River Land Agency, Kingston, N. Y.

No. 994—Farm of 37 acres; located 4 miles from Saugerties P. O., R. D.; $1\frac{1}{2}$ miles from railway station at Katrine, on line of W. S. Ry.; school across from house, $\frac{1}{2}$ mile from Protestant church, 2 miles from Catholic church. Highways good. Nearest large village, Saugerties, 4 miles distant, population about 4,000.

This farm is about 100 miles from New York City. Surface of farm, rolling. Soil, red gravel. Best adapted to general farming. Fences in poor condition. House, 11 rooms, $\frac{1}{2}$ stone, $\frac{1}{2}$ frame, fair condition. Outbuildings: barn in fair condition, woodhouse, wagonhouse and chicken house, poor condition. Watered by well and cistern. 1 mile from Hudson river. Occupied by tenant. Reason for selling, owner a widow and cannot attend to farm. Price, \$3,000. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address Mrs. Loretta Stratton, 212 South 11th Ave., Mt. Vernon, N. Y.

No. 995—Farm of 47 acres; located $\frac{1}{2}$ mile from West Camp P. O. and railway station, on line of W. S. Ry.; $\frac{1}{4}$ mile from school, $\frac{1}{2}$ mile from Protestant church, 2 miles from butter factory. Highways, good. State road. Nearest large village, Saugerties, 3 miles distant, population about 4,000, reached by highway, rail and boat. This farm is about 103 miles from New York City. Surface of farm, rolling, slopes to east. Altitude, 150 feet. Soil, clay loam. Acres in meadow, 4; in natural pasture, 3; in timber, 34, hickory, oak, ash and maple. Acres tillable, 13. Fruit, apples, pears, peaches, plums, cherries, blackberries and currants. Best adapted to grain, fruit, truck gardening and poultry. Fences, wire and rail, good condition. House, 30x32, fair condition, $1\frac{1}{2}$ stories, cellar and attic. Outbuildings: barn, 30x35, 2 stories and basement, 2 poultry houses and other outbuildings, good condition. Watered, house by well, barns by cistern, fields by brook and spring. Occupied by owner. Price, \$3,500. Terms, $\frac{1}{2}$ cash, balance at $5\frac{1}{2}\%$. Address N. D. Rand, West Camp, N. Y.

TOWN OF ULSTER

Population 3,797

No. 996—Farm of 96 acres; located $2\frac{1}{2}$ miles from railway station at Katrine, on line of W. S. Ry.; $1\frac{1}{4}$ miles from school, $1\frac{3}{4}$ miles from Reformed church. Nearest city, Kingston, $4\frac{1}{2}$ miles distant, reached by State road. Surface of farm, mostly level. Soil, clay loam and black. Acres in natural pasture, 4; in timber, 12. Acres tillable, 80. Fruit, apples, peaches, cherries, pears and plums. Best adapted to hay, grain, potatoes and corn. House, large, 9 rooms, attic and porch, tenant house, 7 rooms,

* Farm is in hands of agent or real estate dealer.



FIG. 22.—FARM 993, TOWN OF SAUGERTIES, ULSTER COUNTY.



FIG. 23.—HOUSE ON FARM 985, TOWN OF ROCHESTER, ULSTER COUNTY.

both in good condition. Outbuildings: 3 large barns, two 30x40 and one 40x50, 2 sheds, granary and wagonhouse, 28x39, fair condition. Watered by well. Occupied by owner. This farm is $\frac{1}{2}$ mile

from Lake Katrine, 1 mile from Hudson river. Reason for selling, ill health of owner. Price, \$10,000. Terms, $\frac{1}{2}$ cash. Address Benj. I. Osterhoudt, Saugerties, N. Y., R. D. 4.

WARREN COUNTY

Area, 940 square miles. Population, 32,223. Annual precipitation, 32.41 inches. Annual mean temperature, 45.2°. Number of farms, 1,865. County seat, Lake George.

This county is located in the eastern part of the state and is bounded on the east by Lake George and is intersected by the upper Hudson River and is partly drained by the Schroon River.

The surface is mountainous and extensively covered with forests of beech, hickory, oak, elm, pine, spruce, sugar maple and hemlock. Many of the mountains and hills are steep and present a broad surface of barren rock. Gneiss and granite are the predominant rocks of the county. Trenton limestone and Potsdam sandstone are found in the southeastern part, also black marble. The valleys are fertile and well adapted to pasture. The soil is largely clay loam along the Hudson and Schroon River Valleys while that in the region of and south of Lake George is sandy and gravelly loam. Crops are reported as follows: Corn, 60,750 bushels; oats, 39,595 bushels; buckwheat, 30,524 bushels; potatoes, 163,673 bushels; hay and forage, 25,345 tons. Lumber is one of the leading products of the county. The total valuation of farm property is \$6,589,308, an increase of 61 per cent. during the past ten years. Domestic animals reported are dairy cows, 5,387; horses, 3,221; swine, 2,070; sheep, 12,111; poultry, 48,354; production of milk, 2,396,268 gallons; dairy products amounted to \$170,423. The county is traversed by the Adirondack division of the Delaware and Hudson Railroad and one of its branches from Fort Edward to Lake George. Trolley lines from Albany, Troy, Schenectady and Saratoga Springs extend up through the county as far north as Warrensburg, through Lake George. Union and graded schools in the villages and towns; an academy at Glens Falls, with 111 district schools afford the best of educational facilities for the farmer. There are 70 miles of state and county roads, 791 miles of improved highways. Milk stations and creameries are located at Glens Falls and Lake George. In the county are three granges and one county fair society. Much of the increase of the value of farms and farm buildings is brought about by the large number of men of means purchasing tracts for summer homes and cottages in the mountains and along the lake shores.

TOWN OF BOLTON

Population 1,518

No. 997—House and lot, $\frac{3}{4}$ acre; in Bolton; 8 miles from railway station at Lake George, on line of D. & H. R. R.; $\frac{1}{4}$ mile from school; 1 mile from church. Highways, good, State road. Nearest large village, Bolton Landing, population about 350, $1\frac{1}{2}$ miles distant, reached by highway. House, $1\frac{1}{2}$ stories, 6 rooms, in good condition. Barns, 26x36, in fair condition. Watered by well. $\frac{1}{4}$ mile from Lake George. This would be a good location for city boarders. Occupied by owner. Reason for selling, owner wishes to get a farm. Price, \$2,000. Terms, cash, or will exchange for small farm. Address John Bennett, Bolton, N. Y.

TOWN OF CHESTER

Population 1,721

No. 998—Farm of 100 acres; $2\frac{1}{2}$ miles from Chestertown P. O.; $2\frac{1}{2}$ miles from railway station at Riverside, on line of Adirondack R. R.; $\frac{3}{4}$ mile from school; $2\frac{1}{2}$ miles from churches. Highways, good; macadamized road. Nearest large village, Chestertown, population 600, $2\frac{1}{2}$ miles distant, reached by highway. Surface, rolling. Soil, sandy loam. Acres in meadow, 35; in natural pasture, 35; in timber, 30, pine, second growth poplar, balsam, tamarack and some hard wood; acres tillable, 50. Fruit, 50 apple trees. Best adapted to potatoes, buckwheat, corn and oats. Fences, rail and board, fair condition. House, 2 stories, 28x30, with wing, in good condition. Barn, 30x

40, with sheds, in good condition. Watered by well. This is a good place to keep summer boarders; good place on lake front for nearly a mile. Unoccupied. Reason for selling, to develop lake front. Price, \$5,000. Terms, cash, or will try to suit purchaser. Address Dr. F. E. Aldrich, Chestertown, N. Y. Owner will rent.

No. 999—Farm of 120 acres; 2 miles from South Horicon P. O.; 10 miles from railway station at Warrensburg, on line of Adirondack R. R.; 2 miles from school; 3 miles from churches. Highways, good. Surface of farm, rolling. Altitude, 700 feet. Soil, sandy loam. Acres in meadow, 30; in natural pasture, 30; in timber, 60, second growth and first growth hard wood; acres tillable, 60. Fruit, about 100 apple trees. Best adapted to oats, buckwheat, corn and potatoes. Fences, rail, fair condition. House, 2 stories, fair condition. Outbuildings: barn, 30x40, with good frame sheds attached. Watered by spring. This farm borders on Schroon Lake. About 400 sugar maples on farm. Daily mail route from Horicon to Warrensburg. Occupied by owner. Reason for selling, ill health of owner. Price, \$3,000. Terms, cash. Address Alonzo McKinstry, River Bank, N. Y.

No. 1000—Farm of 80 acres; 2½ miles from Chestertown P. O.; 4½ miles from railway station at Riverside, on line of Adirondack R. R.; ½ mile from school; 2½ miles from churches. Highways, good, macadamized. Surface of farm, rolling. Altitude, 850 feet. Soil, sandy loam, good. Acres in meadow, 30; in natural pasture, 40; in timber 10, second growth pine and hard wood; acres tillable, 60. Fruit, about 100 apple trees. Best adapted to buckwheat, oats, corn, potatoes and hay. Fences, rail, good condition. House, 18x26, with kitchen attached, good condition. Outbuildings: barn, 30x40; carriagehouse, 26x36; good condition. Watered by well and springs. Farm borders on Loon Lake. Occupied by owner. Reason for selling, owner wants to go into other business. Price, \$2,200. Terms, \$1,200 down, remainder on bond and mortgage. Address Sidney Hayes, Chestertown, N. Y.

TOWN OF JOHNSBURG

Population 2,315

No. 1001—Farm of 330 acres; 3 miles from North Creek P. O. and railway sta-

tion on line of D. & H. R. R.; 1½ miles from school, Methodist and Baptist churches; 3 miles from Catholic church. Highways, hilly but in good condition. Surface of farm, fairly level. Soil, clay loam. Acres in meadow, 70; natural pasture, 50; timber, 200, poplar, spruce and hard wood; acres tillable, 100. Fruit, about 150 apple trees. Best adapted to potatoes, corn, oats and rye. Fences, wire, in good condition. House, 22x30, in good condition. Outbuildings: 3 barns, one 30x40, one 20x60 and one 20x40; icehouse, 12x18; hoghouse, 16x18, all in good condition. Watered by well and brook. ½ mile from Hudson River. Unoccupied. 3,000 white pine trees have recently been planted. Excellent springs on farm. Reason for selling, owner wishes to retire. Price, \$3,000. Terms, \$1,000 down, remainder secured by mortgage. Owner will sell 110 acres with buildings and orchard for \$1,500 and rent the other lots at reasonable price. Owner will rent for cash. Address Daniel Hurley, 18 Grove Ave., Glens Falls, N. Y.

TOWN OF QUEENSBURY

Population 2,667

No. 1002—Farm of 80 acres; 1 mile from Queensbury P. O.; R. D. 1; 5 miles from railway station at Glens Falls, on line of D. & H. R. R.; 1 mile from school and Methodist church; 5 miles from milk station. Highways, good. Nearest large city, Glens Falls, population 16,000, 5 miles distant, reached by highway. Surface, rolling. Soil, sandy loam. Acres in meadow, 7; natural pasture, 25; timber, 25; chestnut, pine and oak, second growth; acres tillable, 35. Fruit, 20 apple trees. Best adapted to potatoes. No fences. House, small, 5 rooms, fair condition. Barn in poor condition. Watered by well and pond. Unoccupied. Reason for selling, owner a woman and cannot attend to farm. Price, \$2,200. Terms, easy. Owner will rent for \$80 per year. Address Harriet A. Bentley, 12 Elm St., Glens Falls, N. Y.

No. 1003—Farm of 71 acres; 4 miles from Lake George P. O., R. D. 1; 4 miles from railway station at Lake George, on line of D. & H. R. R.; a few rods from school; 4 miles from churches; 9 miles from milk station. Highways, somewhat hilly but good. Altitude, 500 feet. Surface of farm, rolling. Soil, gravelly loam. Acres in natural pasture, 25; remainder tillable. Fruit, apples

and pears. Best adapted to corn, potatoes, buckwheat, oats and barley. Fences wire and rail, fair condition. House, 30x50, fair. Outbuildings: barn, 30x40, fair condition; sheds; cornhouse. Watered by well, springs and brook. This farm is $1\frac{1}{4}$ miles from Lake George. Occupied by owner. Reason for selling, poor health of owner's wife. Price, \$3,500. Terms, cash. Address Chas. Dickinson, Lake George, N. Y., R. D. 1, Box 27.

No. 1004—Farm of 71 acres, located 4 miles from Lake George P. O., R. D. 1; 4 miles from railway station at Lake George, on line of D. & H. R. R.; 30 rods from school; 3 miles from Presbyterian church; 8 miles from milk station. Highways, somewhat hilly but good. Nearest large village, Lake George, 8 miles distant, reached by highway. Surface of farm, rolling. Altitude about 500 feet. Soil, loam. Acres in meadow, 46; in natural pasture, 25. Acres tillable, 46. Fruit, apples, cherries, plums, pears, peaches, grapes, berries and currants. Best adapted to corn, oats, potatoes, hay and garden truck. Fences, rail and wire, good condition. House, 2 stories, slate roof, 10 rooms, good condition. Outbuildings: barn, 26x80; base-

ment, fair condition; wagonhouse, 20x26; shop, 10x26; henhouse. Watered by well, brook and springs. This farm is $\frac{1}{2}$ mile from Lake George. Occupied by owner. Reason for selling, ill health of owner's wife. Price, \$3,500. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address Chas. A. Dickinson, Lake George, N. Y., R. D. 1, Box 27.

TOWN OF STONY CREEK

Population 910

No. 1005—Farm of 203 acres, located 8 miles from railway station at Stony Creek, on line of D. & H. R. R.; $\frac{1}{2}$ mile from school; 2 miles from Protestant church. Highways, somewhat hilly but good. Surface of farm, quite stony. Altitude about 1,800 feet. Soil, muck loam. Acres in meadow, 35; in natural pasture, 40; in timber, 128; beech, birch, spruce, hemlock, balsam, maple and ash. Acres tillable, 25. Fruit, mostly apples, some plums and cherries. Best adapted to potatoes, oats and buckwheat. Fences, post and board. House, 29x30, 2 stories. Outbuildings: icehouse; 2 barns, 26x36, need some repairs. Watered by well, springs and brook. Occupied by owner. Price, \$1,400. Terms, cash. Address J. H. Van Arnum, Stony Creek, N. Y.

WASHINGTON COUNTY.

Area, 861 square miles. Population, 47,778. Annual precipitation, 35.6 inches. Annual mean temperature, 46.2°. Number of farms, 3,564. County seat, Hudson Falls.

This county is located in the eastern part of the state bordering on Vermont. Lake George bounds the county on the northwest and the Hudson River on the west. It is drained by the Hoosic, Pawlet and Poultney Rivers and by the Battenkill and Weed Creeks. Lake Champlain forms a part of the eastern boundary of the county.

The surface is hilly and mountainous. Along the eastern border extends a range of high hills composed wholly of shale, sand and clay. These hills by the action of rain and weather have deposited a rich deep loam in the valleys and lower uplands. The fertility of this rich loam is constantly being renewed by this same weather agency. Forests of beech, elm, sugar maple, spruce and hemlock and other trees cover a large part of the county. Among its minerals are iron ore, graphite, slate and water lime. The staple crops of the county are exceedingly good, being corn, 597,342 bushels; oats, 659,913 bushels; buckwheat, 52,264 bushels; rye, 70,016 bushels; potatoes, 1,375,013 bushels; hay and forage, 121,417 tons; considerable flax is also grown in the county. The value of all farm property is \$18,459,934, showing a marked increase over the value of 1900. The average price of improved land is \$31.20 per acre. There are reported, dairy cows, 28,169; horses, 10,070; swine, 12,859; sheep, 36,752; poultry, 167,477; production of milk, 13,521,120 gallons; total receipts from the sale of dairy products, \$1,327,575.

The county is intersected by branches of the Delaware and Hudson railroad and by the Champlain canal. Whitehall is the principal town of the county and has large manufacturing interests, which use large quantities of lumber. There are 224 school districts in the county; 31 miles of state roads and 1,370 miles of graded and improved highways. Twenty-one milk stations and factories take care of the

milk interests of the county and 21 agricultural organizations contribute to the agricultural and farming interests.

TOWN OF CAMBRIDGE

Population 1,694

No. 1006—Farm of 120 acres; 1 mile from Cambridge P. O. and station, on D. & H. R. R. Highways, good. Soil, several varieties, all good. Acres in meadow, 40; tillable, 100; timber, valuable pine and oak of good size. Adapted to corn, oats, potatoes, etc. Fences, wire, board, stone and stump. House, 1½ stories, 30x40, 14 rooms, in fair condition. Barns: 2 barns, 30x40 and 26x36; shed and loft, 40 feet; horse barn; hogpen, etc.; in good condition. Watered, house and barns, by wells and running water; fields, by springs. Price, \$5,500. Terms, easy. Owner will rent. Address Wm. Eldridge, Cambridge, N. Y.

No. 1007—Farm of 90 acres; 2 miles from Buskirk P. O., R. D. 1; 2 miles from railway station on line of B. & M. R. R.; 30 rods from school; 2 miles from churches and milk station. Surface, rolling or level. Soil, mostly gravel. Acres tillable, 88. Fruit, about 35 trees. Best adapted to corn, potatoes, oats, etc. House, 2 stories, good. Outbuildings: barn, 48x30; shed for sheep, water in shed; hoghouse; wagonhouse; woodshed and cornhouse. Watered, house, by well; barn, by springs and streams. Hoosick river, 2 miles distant. Occupied by tenant. Reason for selling, owner cannot attend to farm. Price, \$4,500. Terms, \$2,500 down, balance on mortgage. Address S. A. Thompson, Buskirk, N. Y.

*No. 1008—Farm of 120 acres, located 1 mile from Cambridge P. O. and railway station on line of D. & H. Ry.; ½ mile from school; 1 mile from churches. Highways in excellent condition. Surface of farm level and rolling. Soil, gravel and slate loam. Acres in timber, 20; oak, chestnut, pine. Acres tillable, 90. Best adapted to hay, grain and dairying. Fences in good condition. House, 1½ stories, slate roof, 14 rooms. Outbuildings: barn, 36x40 with basement, shed with hay loft; granary, 20x30; hay barn, 26x40; tenant house and barn, all in good condition. Watered, house and barn by well, fields by springs. Occupied by owner. Price, \$6,000. Terms, ½ cash. Address Frank

H. Knox, agent, 469 State St., Schenectady, N. Y.

TOWN OF EASTON

Population 2,133

No. 1009—Farm of 254 acres; 6 miles from Schaghticoke P. O., R. D. 1; 7½ miles from railway station at Schaghticoke, on line of B. & M. R. R.; ½ mile from school; 2 miles from churches, butter factory and milk station; 3 miles from cheese factory. Highways, hilly but good. Nearest city, Troy, 20 miles distant, 7½ miles by highways and remainder by rail. Surface partly rolling, generally level. Soil, gravel and clay loam. Acres in meadow, 60; in natural pasture, 70; in timber, 18, about 12 acres of first growth pine, oak, maple and beech; acres tillable, 230. Fruit, apples, pears and plums. Adapted to all crops grown in this climate. Fences, wire, new; rail, old. Large colonial house, 18 rooms, needs painting. Outbuildings: 2 large barns; 2 small barns; cribs; wagon-house; hoghouse; sheds, etc.; good condition. Watered by spring, well, cistern; running water at barn. This farm is 2 miles from Hudson River. Occupied by owner. Reason for selling, advanced age of owner. Price, \$15,000. Terms, cash. Address Mrs. Maria J. Eddy, Schaghticoke, N. Y.

TOWN OF GREENWICH

Population 4,227

No. 1010—Farm of 300 acres; 2 miles from Greenwich P. O. and railway station on G. & J. R. R.; R. D. 1 from Greenwich. Highways, good. Soil, gravel and slate loam. Acres in meadow, 75; tillable, 175; timber, 50. Fruit, a large variety of good fruit. Adapted to general farming. Altitude, high and healthful. Fences, stone, patent rail and wire in fair condition. House, 50x30, in good condition, bathroom, hot and cold water; good tenant house, 3 barns, 32x40 each; enlarged one barn, 38x30, in fair condition; good horse barn; new underground cow stable, 36x85, concrete floor, for 40 cows. Watered, house, barns and fields, by running water and springs. This farm is considered a fine stock farm. Price, \$10,000. Terms, reasonable. Owner will sell 200 acres with buildings

* Farm is in hands of agent or real estate dealer.

for \$7,000. Address John Wilson, Jr., Greenwich, N. Y., R. D. 1.

No. 1011—Farm of 106 acres; $1\frac{1}{2}$ miles from Greenwich P. O., R. D. 5; $1\frac{1}{2}$ miles from railway station at Greenwich, on line of B. & M. R. R.; $\frac{1}{4}$ mile from school; $1\frac{1}{2}$ miles from churches, butter and cheese factory and milk station. Highways, good. Nearest village, Greenwich, population, 2,500, $1\frac{1}{2}$ miles distant, reached by rail and highway. Surface, level and rolling. Soil, sand and clay loam. Acres in meadow, 25; natural pasture, 20; timber, 5, pine and hard wood; acres tillable, 90. Fruit, choicest kind, young trees, bearing 4 years. Best adapted to potatoes, corn, oats, and rye. Fences, stone wall and wire, in good condition. Brick house, 48x36, 2 stories, slate roof, 4 cellars, woodshed attached. Outbuildings: 3 barns, 1 30x40, 1 large cow barn, 1 new barn, holds 30 tons of hay; large icehouse; carriagehouse; hogpen, suitable for 50 hogs; cornhouse, in good repair. Watered by wells, springs and cistern. Occupied by owner. There is a building that has been used for meat market which could be used as tenant house; also slaughter house suitable for barn. Reason for selling, poor health of owner. Price, \$5,000. Terms, cash. Address O. S. Platt, Greenwich, N. Y., R. D. 5.

No. 1012—Farm of 271 acres; $2\frac{1}{2}$ miles from Greenwich P. O., R. D. 3; $2\frac{1}{2}$ miles from railway station at Greenwich, on line of G. & J. R. R.; $\frac{3}{4}$ mile from school; $2\frac{1}{2}$ miles from churches, butter factory, cheese factory and milk station. Highways, State road to Greenwich, $\frac{1}{3}$ mile from house. Surface of farm, rolling and level. Acres in meadow, 10; in natural pasture, 40; in timber, 20; acres tillable, 200. Best adapted to corn, oats, rye, potatoes, etc. Fences, in fair condition. House, large, 2 stories, good condition. Outbuildings: 2 large barns and 1 small barn. Watered by spring and brook. Battenkill River on edge of farm. Occupied by tenant. Reason for selling, to close an estate. Price, \$8,000. Terms, mostly cash. Owner will rent with option to buy. Address L. G. Thompson, Greenwich, N. Y.

No. 1013—Farm of 200 acres, located 2 miles from Cossayuna P. O.; 5 miles from railway station at Salem, on D. & H. R. R.; 1 mile from school; 2 miles from churches, cheese factory and milk

station. Highways, good. Surface of farm rolling. Altitude, 1,100 feet. Soil, Cossayuna loam. Acres in meadow, 65; in natural pasture, 25; in timber, 75. Acres tillable, 100. Fruit, apples, pears, cherries, quinces, currants, gooseberries, etc. Best adapted to oats, corn, rye, potatoes and buckwheat. Fences, stone, rail and wire. House, brick, 40x27 with wing, 30x27; frame house, 24x20 with wing, 20x18, good condition. Outbuildings: barn, 46x48; barn, 46x30, good condition; shed, hogpen, toolhouse, shop and hen-houses. Watered by well, cistern, streams and springs. Occupied by owner. Price, \$7,000. Terms, $\frac{1}{2}$ cash, balance on mortgage. Address Minnie N. Beveridge, Cossayuna, N. Y.

No. 1014—Farm of 300 acres, located 1 mile from E. Greenwich P. O.; 1 mile from railway station at E. Greenwich, on line of G. & J. R. R.; 1 mile from school; 4 miles from churches; 1 mile from cheese factory and milk station; 8 miles from milk condensing plant. Highways in good condition. Nearest large village, Salem, 4 miles distant, reached by rail and highway. Surface of farm rolling. Soil, slate loam. Acres in meadow, 60; in timber, 15; pine, chestnut, maple and hemlock. All tillable except woodland. Fruit, apples, pears, plums and cherries. Best adapted to potatoes, corn and grain. Fences, stone walls and wire. House, 12 rooms, 2 stories, brick, good condition. Outbuildings: horse barn, 30x36; 3 hay barns, 36x50, with basement, silo; modern class barn, 30x60. Watered by running water, brook, spring and lake. Occupied by owner. Reason for selling, ill health. Price, \$9,000. Terms, cash. Address D. M. Connor, East Greenwich, N. Y.

TOWN OF HEBRON

Population 1,599

No. 1015—Farm of 100 acres; 5 miles from West Hebron P. O., R. D. 2; 9 miles from railway station, on line of D. & H. R. R.; 1 mile from school; $2\frac{1}{2}$ miles from Presbyterian church; $1\frac{1}{2}$ miles from butter factory and cheese factory; 8 miles from milk station; 9 miles from milk condensing plant. R. D. passes farm. Highways, rolling but good. Nearest village, West Hebron, population, 500, reached by highway. Surface of farm, rolling. High altitude. Soil, slate and loam. Acres in meadow, 15; in timber, 20, hard wood, oak and

chestnut; acres tillable, 60. Fruit, apples, plums, pears and grapes. Best adapted to potatoes, oats and rye. Fences, wire, rail and stone, good condition. House, 5 rooms, large pantry, clothes closet and hall. Outbuildings: new barn 32x42, slate roof, basement. Watered, house, by well; barns and fields, by springs. Land is worked on shares; house is not occupied. Reason for selling, owner has another farm. Price, \$1,800. Terms, $\frac{1}{3}$ cash. Address John A. Dennison, Salem, N. Y.

TOWN OF PUTNAM

Population 504

No. 1016—Farm of 180 acres; $\frac{1}{2}$ mile from Wright's station, on line D. & H. R. R.; R. D.; 4 miles from Ticonderoga. Fine view of Lake Champlain, $\frac{1}{2}$ mile distant. Fine stock farm. House, 24x40, with addition recently repaired. 3 barns, two, 30x40, one 24x50; sheep barn; horse barn; other buildings; all good. Well watered and fenced. Price, \$5,000. Address J. E. Paterson, Putnam Station, N. Y., R. D. Owner will rent.

TOWN OF SALEM

Population 2,780

No. 1017—Farm of 187 acres; 4 miles from Shushan; R. D.; 4 miles from Salem. Good stock and grain farm. 10 acres timber. $1\frac{1}{2}$ -story house, 40x27,

with wing, 16x30, very comfortable and in good repair. Barn, 26x48, woodshed, 30x20, both good. $\frac{1}{2}$ mile trout brook. Well watered and fenced. Very cheap at price asked, \$2,000. Easy terms. Address Patrick Hughes, Shushan, N. Y., R. D.

No. 1018—Farm of 100 acres; 3 miles from Salem; R. D.; 15 acres of timber; balance tillable land, good for grass, grain and stock raising. Large house, in fair repair. Good barn. Well watered. Fairly well fenced. Price, \$2,000. Terms, to suit purchaser. Address Abner Robertson, Salem, N. Y. Owner will rent.

No. 1019—Farm of 233 acres; 1 mile east of Shushan, N. Y. This was originally 2 farms and could be divided very easily if desired, as there are ample buildings on each part. On the south portion is a tenant house and barn; on the north portion is the family dwelling, which is a large 2-story building with piazzas, also a number of barns. Each portion has a fine wood lot and plenty of running water. The south boundary line is the Battenkill River. Owner prefers to sell all together, but would divide if necessary. Land in good condition; well fenced and easily worked by all kinds of farm machinery. Price, \$10,000. Terms, part cash, balance on bond and mortgage if desired. Address S. A. Binger, Shushan, N. Y.

WAYNE COUNTY

Area, 621 square miles. Population, 50,179. Annual precipitation, 41.36 inches. Annual mean temperature, 50°. Number of farms, 5,237. County seat, Lyons.

This is one of the north tier counties bordering on Lake Ontario and is drained by the Clyde River and Mud Creek which unites with the Canandaigua outlet at Lyons.

The surface is undulating and diversified with long, low and parallel ridges running north and south. There are considerable woodlands of beech, ash, hickory, elm, oak, sugar maple and other trees covering about one-sixth of the county. Excellent building stone, iron ore and gypsum are found. The soil is of the same general nature as the other counties bordering on Lake Ontario, except that in the level strip along the lake where clay and gravelly loam appear in about equal quantities. In the eastern half of the county on both sides of, and including the Clyde River Valley, black, dirt with occasional areas of dark, gravelly loam is found. In the western half along the Mud creek valley and south to the county line the soil is composed of sandy and gravelly loam. The crops reported are corn, 911,653 bushels; wheat, 337,333 bushels; barley, 70,000 bushels; dry beans, 79,422 bushels; potatoes, 1,049,202 bushels; hay and forage, 104,117 tons. About 50,000 bushels of buckwheat and rye were also produced. The value of all farm property is \$34,481,902, an increase over that of 1900 of 45.7 per cent. Domestic animals are reported as follows: Dairy cows, 20,645; horses, 15,373; swine, 20,749; sheep, 24,587; poultry, 343,400; production of milk, 9,930,245 gallons valued at \$875,893.

The county is traversed by the Erie (Barge) Canal, the New York Central and Hudson River; West Shore; Rome, Watertown and Ogdensburg, and Northern Cen-

tral railroads. There are also electric lines extending in the various directions throughout the county. Lyons, the principal city of this county, contains flour mills, distilleries, barrel manufactories and extensive beet sugar factories. Ample markets for everything produced in this county are near at hand in the cities of Rochester, Syracuse, Buffalo, etc.

There are 209 district schools in the county, 26 miles of state and county roads and 552 miles of other improved highways; 26 milk stations are conveniently located throughout the county. One Pomona grange; 20 subordinate granges; a fair association; a union agricultural society; county fire relief association; county agricultural society; county fruit growers' association, and the Williamson Fruit Growers' Association constitute the different farmers' associations of the county.

TOWN OF GALEN

Population 4,460

No. 1020—Farm of 200 acres; 2 miles from Clyde P. O. and railway station, on line of the N. Y. C. & H. R. R. R.; $\frac{1}{2}$ mile from school; 2 miles from churches, all denominations; 2 miles from butter factory; on State highway. Nearest village, Clyde, population of 2,500, distant 2 miles, reached by highway and trolley. Surface, rolling. Soil, gravel. 20 acres of meadow; 20 acres of natural pasture; 10 acres of timber, beech and maple; 150 acres are tillable. Large fruit orchard, of 1,500 apple trees and 100 peach trees. Land is adapted to all kinds of crops. Fences, in good condition. Large brick house, in good condition. 3 barns of large size; 2 hoghouses; 1 stone storage building, 26x46x16. House is watered by well; barns, by well; fields, by spring and river. Clyde River adjoins property on the west. Occupied by owner. Reason for selling, owner would like to retire. Price, \$16,000. Terms, \$4,000 down, and balance on time. Owner will rent with option to buy. Address F. L. Waldorf, Clyde, N. Y.

TOWN OF HURON

Population 1,531

No. 1021—Farm of 147 acres; $1\frac{1}{2}$ miles from Alton P. O., R. D. 1; $1\frac{1}{2}$ miles from railway station at Alton, on line of N. Y. C. R. R. (R., W. & O. branch); $\frac{1}{8}$ mile from school; $\frac{1}{2}$ mile from church; $3\frac{1}{2}$ miles from milk station. Highways, good. Nearest large village, North Rose, $3\frac{1}{2}$ miles distant, reached by rail and highway. Soil, part sandy and part clay. acres in meadow, 20; in natural pasture, 5; in timber, 20, oak and chestnut; acres tillable, 90. Fruit, 350 bearing apple trees, 200 young apple trees, 200 pear trees, 4 years. Best adapted to corn, wheat, oats, hay, beans and potatoes. Fences, mostly wire, about $\frac{1}{2}$ new, balance old. House, 7 rooms, good condi-

tion. Outbuildings: evaporator, 16x40; cornerib, new; henhouse, 100x17, new; granary, 20x35, partly new; stables, 25x40, old; one barn, 25x30, old; several small outbuildings. Watered, house and barns, by driven well; fields, by springs. Eastern boundary of farm on Great Sodus Bay. Farm is about 5 miles from Lake Ontario. Occupied by tenant. Reason for selling, failing eyesight of owner. Price, \$100 per acre. Terms, \$6,500 cash, balance on bond and mortgage at 5%. Address M. J. Whitman, 94 Conkey Ave., Rochester, N. Y.

TOWN OF SODUS

Population 4,857

No. 1022—Farm of 100 acres; $\frac{1}{2}$ mile from P. O., R. D. 1; 1 mile from railway station at Alton, on line of R., W. & O. R. R.; $\frac{1}{2}$ mile from school and churches; 7 miles from butter and cheese factory; 1 mile from milk station. Highways, good. Nearest large village, Alton, population, 600, $\frac{1}{2}$ mile distant, reached by highway. Surface, mostly level, some rolling. Soil, clay loam. Acres in meadow, 20; in natural pasture, 20; in timber, 3, beech and maple; acres tillable, 97. Fruit, 56 acres apple orchard, 300 pear trees. Adapted to all kinds of crops. Fences, mostly wire. House, 10 rooms, in good condition. Barn, large, in good condition. 2 good tenant houses on this farm; 1 large evaporator. Watered by wells. Occupied by owner. Reason for selling, owner wishes to retire. Price, \$20,000. Terms, \$5,000 down. Address Chas. and George Emery, Alton, N. Y.

No. 1023—Farm of 15 acres; $\frac{1}{4}$ mile from Alton P. O.; 1 mile from railway station at Alton, on line of R., W. & O. R. R.; $\frac{1}{4}$ mile from school and Protestant church; 4 miles from butter factory, cheese factory and milk station. Highways, good. Surface of farm level. Soil, clay loam. Acres in meadow, 3.

Acres tillable, 15. Fruit, 100 pear and 100 apple trees. Fences, wire, good. House, new, 8 rooms. Outbuildings: large barn, shed, etc. Watered by well. Occupied by owner. Reason for selling, owner wants a larger place. Price, \$2,500. Terms, \$1,000 down. Address Fremont Shepard, Alton, N. Y.

TOWN OF WOLCOTT

Population 2,952

No. 1024—Farm of 55 acres; 2 miles from Fair Haven P. O.; R. D. 5, on L. V. R. R.; $4\frac{1}{2}$ miles from railway station at Red Creek, on line of N. Y. C. R. R.; 1 mile from school; 2 miles from Methodist and Presbyterian churches; 2 miles from shipping station; $4\frac{1}{2}$ miles from cheese factory. Highways, fair. Nearest large city, Oswego, population about 25,000, 16 miles distant, reached by rail. Surface, roll-

ing and hilly. Soil, clay loam and gravel. Acres in meadow, 12; natural pasture, 7; timber, 4, beech and maple; acres tillable, 50. Fruit, 100 apple trees, 90 pear, 12 peach, 6 plum, 4 prunes, cherries, quinces, grapes. Best adapted to wheat, oats, corn, potatoes and hay. Fences, wire and rail, good condition. House, 9 rooms, furnace, first-class condition, and woodhouse. Outbuildings: main barn, almost new, with basement, 30x55; wagonhouse, 18x30; cement floors in all barns; henhouse, 15x75; silo. Watered by well, spring and creek. Farm is one mile from Lake Ontario; an ideal situation for fruit growing, especially apples. Occupied by owner. Reason for selling, owner desires larger farm. Price asked is about what buildings cost. Price, \$100 per acre. Terms, $\frac{1}{2}$ down, balance on mortgage. Address F. L. Mixer, Red Creek, N. Y.

WESTCHESTER COUNTY

Area, 463 square miles. Population, 283,055. Annual precipitation, 54.26 inches. Annual mean temperature, 50.1°. Number of farms, 1,880. County seat, White Plains.

This county is located in the southeastern part of the state and borders on Connecticut. It is bounded on the west by the Hudson River, on the southeast by Long Island Sound, is intersected by the Croton River and is drained in part by the Bronx River.

The surface is hilly and diversified. There are found several quarries of choice white marble and also quarries of domotite (magnesium limestone). The soil is fertile and adapted to pasturage. It consists chiefly of slaty, sandy and gravelly loam. Crops reported are corn, 188,180 bushels; oats, 34,520 bushels; rye, 18,912 bushels; potatoes, 147,153 bushels; hay and forage, 52,252 tons; value of all farm property, \$66,156,044, an increase of 117 per cent. during the past ten years. The average price of improved land in this county is \$434.73 per acre. Domestic animals reported are as follows: Dairy cows, 11,475; horses, 5,392; swine, 5,430; sheep, 1,140; poultry, 138,296; milk produced, 6,942,345 gallons; total receipts from the sale of dairy products, \$765,727.

The county is intersected by the New York, New Haven and Hartford; New York Central, main line, and Harlem and Putnam branch railroads. Many residents of New York City have beautiful villas and country seats in this county. It contains the city of Yonkers and the large villages of Peekskill, Ossining and White Plains. The southern part of the county comprising the populous villages of West Farms, Kings Bridge, Morrisania was annexed to New York City some years ago. White Plains is only 22 miles from the Grand Central Depot, New York City, and contains Alexander Institute which has more than a local reputation. Several celebrated academic and military high schools are located in this county and there are 122 district schools. There is but one creamery in the county as most of the milk produced is shipped directly to New York City. Agricultural societies of the county are represented by 1 coöperative association; 2 granges; a farmers' club; a horticultural society, and a county agricultural society.

TOWN OF NEWCASTLE.

Population 3,573

No. 1025—Farm of 154 acres; 2 miles from railway station at Chappaqua. Soil adapted to general farming. 8

acres orchard; 25 acres timber. 14-room house; 5-room tenant house. Large barn, carriagehouse and other buildings, in fair condition. Spring water. Price, \$40,000. If desired, owner will divide farm as follows. No. 1, with all the

buildings and about 82 acres; price, \$25,000. No. 2, about 32 acres good land; price, \$10,000. No. 3, fine rolling ridge of about 40 acres; price, \$10,000. The highway divides each part. Address W. R. Hallock, Mount Kisco, N. Y., R. D. 3.

TOWN OF YORKTOWN

Population 3,020

*No. 1026—Farm of 50 acres, located 4 miles from Yorktown Heights P. O. and railway station, on line of Putnam Ry.; $\frac{1}{2}$ mile from school; 1 mile from Presbyterian church; 4 miles from butter factory and milk station. Highways, State road. Nearest city, Peekskill, 4 miles distant, reached by highway. Surface of farm rolling. Altitude, 550 feet. Soil, clay loam. Acres in meadow, 30; in natural pasture, 20. Acres tillable, 30; Fruit, apple orchard and other fruit. Fences, stone. House, 2 stories, 16 rooms. Outbuildings necessary for size of farm, good condition.

Watered house by well, barns and fields by spring. Occupied by owner. Reason for selling, owner wants to retire from business. Price, \$10,500. Terms, $\frac{1}{3}$ cash. Address Chas. A. May, agent, Yorktown Heights, N. Y.

*No. 1027—Farm of 72 acres, located 4 miles from Yorktown Heights P. O. and railway station, on line of Putnam Ry.; 1 mile from school and Presbyterian church; 3 miles from butter factory. Surface of farm rolling. Altitude, 600 feet. Soil, sandy loam. Acres in meadow, 40; in natural pasture, 20; in timber, 10, oak, hickory and chestnut. Acres tillable, 40. Fruit, apples and small fruit. Fences, wire and stone. House, 8 rooms. Outbuildings in good condition and ample for size of farm. Watered by well, cistern and springs. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$6,000. Terms, \$1,000 cash. Address Chas. A. May, Yorktown Heights, N. Y.

WYOMING COUNTY.

Area, 606 square miles. Population, 31,880. Annual precipitation, 48.32 inches. Annual mean temperature, 46.6°. Number of farms, 3,529. County seat, Warsaw.

This county is situated in the western part of the state, is drained by Allens, Cattaraugus and Tonawanda Creeks and is bounded on the south by the Genesee River. The surface is undulating and quite extensively covered with woodland. Devonian sandstone, and shale underlie a large part of this county and extensive salt beds are also found, from which are taken large quantities of salt of excellent quality. In the southern part of the county the soil on the upland is gravelly loam and heavy clay, in the valleys a gravelly loam is found which is excellent for pasturage. In the northern part a heavy clay and gravelly loam resting on limestone predominates. Crops reported are as follows: Corn, 109,590 bushels; oats, 915,608 bushels; wheat, 254,788 bushels; buckwheat, 108,237 bushels; dry beans, 194,015 bushels; potatoes, 1,493,071 bushels; hay and forage, 142,315 tons. The average price of farm land per acre is \$28.99, an increase of \$5.59 per acre over 1900. Domestic animals are dairy cows, 28,066; horses, 11,732; swine, 10,487; sheep, 24,531; poultry, 158,211; milk produced, 14,033,000 gallons, the sale of which amounted to \$1,340,704. In the southeast corner of the county the Genesee River flows between perpendicular cliffs 350 feet high. There are several picturesque cataracts known as the Falls of Genesee, one of which is 110 feet in height. The county is intersected by the Erie; Buffalo, Rochester and Pittsburg, and the Batavia, Attica and Arcade railroads, and is connected with Rochester by the Genesee Valley Canal. Cheap, easy and quick transportation to the great markets of Buffalo and Rochester show the advantages of this location. A union school located at Warsaw and a collegiate institute located at Attica with graded schools in villages and 168 district schools place the county high up among the counties of the state in educational lines. There are 36 milk stations and factories in the county; 23 miles of state and county roads and 806 miles of graded and improved highways. The agricultural organizations are 2 fair societies, 12 granges and a Pomona grange.

TOWN OF ARCADE

Population 2,131

No. 1028—Farm of 147 acres; $3\frac{1}{2}$ miles from Arcade P. O., R. D. 3, and from

railway station at Arcade, on line of Penn. R. R. and B. & S. R. R.; $\frac{1}{2}$ mile from school; 2 miles from church; $3\frac{1}{2}$ miles from butter factory and condensing plant; $2\frac{1}{2}$ miles from cheese fac-

* Farm is in hands of agent or real estate dealer.

tory; 3 miles from milk station. Highways, somewhat hilly for $1\frac{1}{2}$ miles, level for remainder. Nearest large village, Arcade, population, 1,400, reached by highway. Surface of farm, mostly level. Soil, hardpan, some gravel. Acres in meadow, 65; in natural pasture, 50; in timber, 25, mostly maple, some beech, excellent sugar bush. Fruit, 175 apple trees, 5 pear trees. Best adapted to grass, grain, potatoes, dairying. Fences, wire, fair condition. House, 9 rooms, fair condition. Outbuildings: barn, 70x30, fair condition. Watered by well and springs. Crystal Lake is 3 miles distant from farm; several small creeks near farm. Merrill-Soule Milk Plant sends team around to farm every day to collect milk. Occupied by owner. Reason for selling, to close an estate. Price, \$4,000. Terms, on application. Address G. E. Cramer, Arcade, N. Y., R. D. 3.

No. 1029—Farm of 103 acres; 3 miles from Arcade P. O., R. D. 3; 3 miles from railway station at Arcade, on line of Penn. R. R. and B. & S. R. R.; $\frac{1}{4}$ mile from school; 2 miles from churches; 3 miles from butter factory, cheese factory, milk station and milk condensing plant. Highways, somewhat hilly for 1 mile, remainder level. Surface of farm, rolling. Soil, hardpan, some gravel. Acres in meadow, 90; in natural pasture, 80; in timber, 25, beech, maple, hemlock, etc.; all tillable except timber land. Fruit, about 65 apple trees. Best adapted to dairying, grass, grain and potatoes. Fences, wire, fair condition. House, 9 rooms, good condition; new house; needs plastering. Outbuildings: cow barn, 60x30; horse barn, 35x30, good condition; cow barn, 25x35, poor condition. Watered, house, by well; barns and fields, by springs. Crystal Lake, $3\frac{1}{2}$ miles from farm. Spring could easily be piped to house and barns.

Merrill-Soule Milk Plant sends team to farm to collect milk every day. Occupied by owner. Reason for selling, to close an estate. Price, \$3,000. Terms, on application. Address G. E. Cramer, Arcade, N. Y., R. D. 3.

TOWN OF EAGLE

Population 1,141

No. 1030—Farm of 216 acres; $3\frac{1}{2}$ miles from Bliss, R. D. Acres in meadow, 131; 50, pasture; 35, timber. Pleasantly located, on line of railway. House, 10 rooms, in good repair. Barns, 32x96, 30x40 and 22x27; a new silo has just been built and telephone placed in house. Watered by streams and springs. Fences, fair. Price, \$35 per acre. Terms, part cash, balance on easy terms. Address W. H. Rugg, Bliss, N. Y., R. D.

No. 1031—Farm of 225 acres; $2\frac{1}{2}$ miles from Bliss P. O., R. D. 3; $2\frac{1}{2}$ miles from railway station, on line of B., R. & P. R. R.; 1 mile from school; $2\frac{1}{2}$ miles from Catholic, Baptist and Methodist churches; cheese factory on farm. Highways, good. State road $1\frac{1}{2}$ miles from farm. Warsaw, population of 4,000, is about 16 miles distant, reached by rail or highway. Surface of farm, level and rolling. Acres in meadow, 105; natural pasture, 90; timber, 30, beech, maple and hemlock; acres tillable, 175. Best adapted to hay, grain, corn, potatoes and cabbage. Fences, mostly wire, fair condition. Large house, in good repair. Telephone in house. Outbuildings: new barn, 36x100, basement for 40 cows, beside box and horse stalls; hay barn will hold 100 tons of hay; tool barn, 30x40; granary, 16x20; silo. Watered by well and creek. Occupied by tenant. Reason for selling, advanced age of owner. Price, \$35 per acre. Terms, reasonable payment, balance on mortgage. Address Fred Wilson, Bliss, N. Y.

YATES COUNTY.

Area, 340 square miles. Population, 18,642. Annual precipitation, 31.75 inches. Annual mean temperature, 46.8° . Number of farms, 2,288. Average value of farm lands per acre, \$66.03. County seat, Penn Yan.

This county is located in the west central part of the state, in the "Finger Lake" district. Seneca Lake forms its eastern boundary, Canadigua Lake its western, and Lake Keuka partly intersects it from the south.

The surface features of the county are marked by a series of five gently sloping ridges running north and south.

The soil consists of a fine quality of gravelly loam intermixed with clay and the disintegrated shales of the Portage group, and is particularly well adapted to pasturage, tillage or fruit growing. Among the valuable rocks that underlie the soil

are Portage sandstone and Tully limestone. The county is well watered by streams, springs, lakes and ponds.

Ash, beech, elm, hickory, oak and maple are the leading trees of the woodlands.

Domestic animals are reported on 2,139 farms as follows: Dairy cows, 5,566; horses, 7,270; swine, 7,884; sheep, 36,554; poultry, 125,644. The number of farms reporting dairy cows was 1,907 and their total production of milk was 2,677,246 gallons. Total receipts from the sale of dairy products was \$156,044.

Yates is the second grape and wine producing county in the state. The first champagne produced in the United States was made in Yates County and this industry has steadily progressed until to-day it exceeds any other county in the United States in this production. The county is well equipped with transportation facilities, good roads, steam and electric lines. Buffalo, Philadelphia, New York, Syracuse, Rochester and other centers of population afford ample markets outside the county for all products of farm, garden, orchard and vineyard.

Educational advantages are of the best, there being, in addition to the many graded, high and academic schools, 104 school districts in the county.

Agricultural organizations comprise a county fair association, Yates County Agricultural Society and nine granges.

TOWN OF BARRINGTON

Population 1,044

No. 1032—Farm of 126 acres, located 6 miles from railway station at Dundee, on line of N. Y. C. & H. R. R.; $\frac{1}{4}$ mile from school; 3 miles from Protestant churches; 6 miles from butter factory. Highways, somewhat hilly but good. Surface of farm, rolling. Soil, clay and black dirt. Acres in meadow, 35; in timber, 15, oak, mostly second growth. Acres tillable, 107. Fruit, 2 acres of apples, also a few plums and cherries. Best adapted to oats, barley, wheat, beans and corn. Fences, wire and rail, fair condition. House, upright and two wings. Outbuildings; barn, 32x60; shed, 50 feet and wagonhouse, 36x25. Watered by well and springs. Reason for selling, owner a widow. Price, \$4,500. Address Mrs. C. A. Lawrence, Dundee, N. Y., R. D. No. 17.

TOWN OF ITALY

Population 861

No. 1033—Farm of 150 acres; 4 miles from Naples P. O., R. D. 26; 2 miles from railway station at Glenlock, on line of L. V. R. R.; $\frac{1}{3}$ mile from school; 1 mile from Methodist church; 4 miles from butter factory. Highways, good. Surface, rolling and level. Soil, sandy loam and light clay. Acres in natural pasture, 25; in timber, 25, hemlock, pine and oak; acres tillable, 100. Fruit, apples, pears, peaches and cherries. Best adapted to corn, potatoes, beans, all grains and clover. Fences, woven wire and rail, fair condition. House, 10 rooms, frame, good condition. Outbuildings: 2 barns; cornhouse; henhouse;

sheds, etc. Watered, house, by soft water; barns, by running water; fields, by springs and brooks. Canandaigua Lake is about 5 miles distant from farm. Occupied by owner. Reason for selling, owner has other business. Price, \$5,000. Terms, a small amount cash, balance to suit. Address W. H. Ellerington, Naples, N. Y., R. D. 26. Owner will rent.

No. 1034—Farm of 84 acres; 6 miles from Middlesex P. O., R. D. 26; 1 mile from railway station at West River, on line of L. V. R. R.; $1\frac{1}{2}$ miles from school; 6 miles from Methodist, Baptist and Catholic churches; 6 miles from cheese factory. Highways, level, good. Nearest large village, Naples, population, 1,200, reached by highway. Surface, rolling. Altitude, 800 feet. Soil, gravel. Acres in meadow, 14; in natural pasture, 10; in timber, 6, oak and hickory; acres tillable, 70. Fruit, 25 acres of grapes, about 4 acres of apples, pears and peaches and 5 acres of raspberries, new fruithouse, can now dry fruit. Best adapted to fruit. House, 9 rooms, good condition. Outbuildings: barn on basement, good condition. Watered by springs. Canandaigua Lake, $\frac{1}{2}$ mile from farm. Occupied by owner. Reason for selling, owner desires to move to another location. Price, \$6,000. Terms, \$1,500 down, remainder on time. Address Casper Schultz, Middlesex, N. Y., R. D. 26.

TOWN OF JERUSALEM

Population 2,444

No. 1035—Farm of 46 acres; $1\frac{1}{2}$ miles from Keuka Park; 6 miles from railway station at Penn Yan, on line of N.

Y. C. R. R.; R. D. 5 from Penn Yan. Nearest large village, Penn Yan, population, 5,000, distant 5 miles. Highways, first-class. Acres in meadow, 2; acres tillable, 43; acres natural pasture, 3; acres timber, 3. Fruit, 26 acres of grapes, bearing; 8 acres 4 and 5-year-old grapes; 5 acres 5-year-old peaches; 2 acres plums, 5 years old; 2 acres of berries and 1 acre of apples, all in fine condition. Occupied by owner. Fences around pasture. House, 2 stories, 30x40, in fair condition. Outbuildings: barn, 20x30, in fair condition; icehouse; henhouse. Old house, 20x30, with wing, 12x20, in poor condition. Watered, house, by well and cistern; barns, by spring. This farm is located on lake side with frontage of 1,500 feet on lake shore and within 1½ miles of Keuka College. Reason for selling, advanced age of owner. There are several cottage sites on the lake shore. For price and terms, address R. F. Scofield, Penn Yan, N. Y.

TOWN OF MIDDLESEX

Population 1,122

No. 1036—Farm of 124 acres, located ½ mile from Rushville P. O., R. D. 23, and railway station, on line of Lehigh Valley Ry; 1 mile from school, Catholic and Protestant churches. Highways, good. Surface of farm, part level and part rolling. Altitude, 670 feet. Soil, clay loam, some gravel. Acres in meadow, 20; in timber, 15. All tillable except woodland. Fruit, apples, 125

trees. Best adapted to corn, beans, barley, hay, oats, etc. Fences, woven wire, good condition. House, 12 rooms, good condition. Outbuildings: barn, 32x100; barn, 34x84; henhouse, hogpen, etc. Watered by well, spring and creek. Occupied by owner. Reason for selling, ill health. Price, \$12,000. Terms, ⅓ cash, balance on bond and mortgage at 5%. Address Wm. H. Savage, Rushville, N. Y. There is a natural gas well on farm, which furnishes light and heat.

TOWN OF POTTER

Population 1,495

No. 1037—Farm of 586 acres; 4½ miles from Penn Yan P. O. and station, on line of the N. Y. C. & H. R. R. R. Surface, partly level, sloping to the east. Highways, somewhat hilly, roads are good. Nearest village, Penn Yan, 4½ miles distant, by highway. Timber, pine, oak and basswood. Some pear, apple and cherry trees, and maple sugar grove. Fences of wood and stone, in fair condition. 2-story house, in fair condition, 30x30, with wing. Good-sized barn, and 3 or 4 outbuildings, in fair condition. House has pump; fields are watered by running stream along eastern boundary of farm. Lake Keuka, 4½ miles distant; Lake Seneca, 10 miles. Occupied by tenant. Reason for selling, owner lives in Rhode Island. Price, \$20,000. Address T. A. Carroll, 87 Weylmet St., Providence, R. I. Owner will rent.

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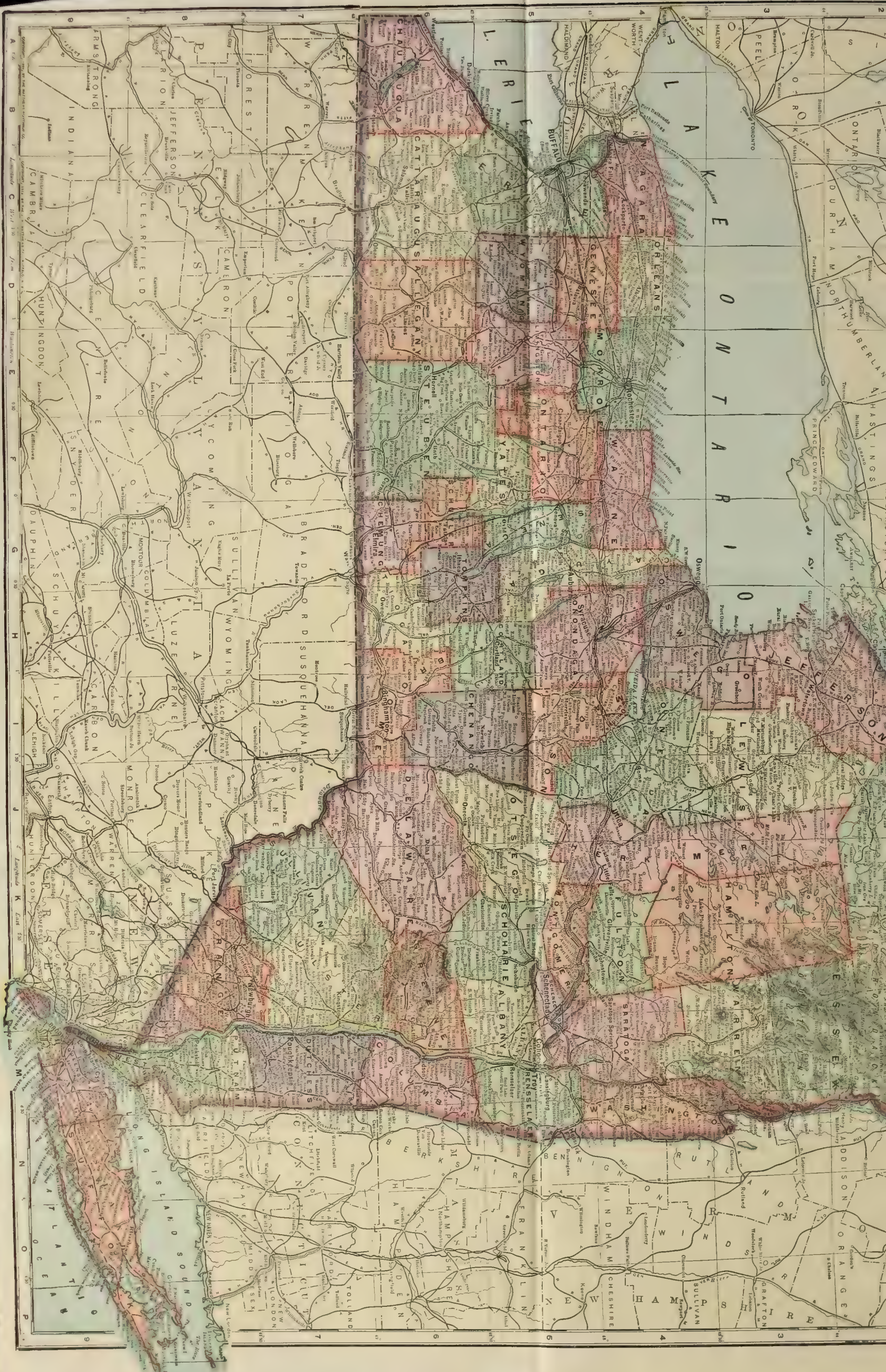
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F. E. Gott



Director van Alstyne



B. D. Van Buren



Lowell Roudebush



J. Van Wagenen, Jr.



O. M. Taylor



F. Z. Hartzell



F. E. Gladwin



J. Jeannin, Jr.



William Hotaling



E. R. Minns

SPEAKERS AT FARMERS' INSTITUTES WHO ANSWERED QUESTIONS

Edward van Alstyne

Meadows	Potatoes
Pastures	Tree fruits
Alfalfa	Grain crops
Dairying	Miscellaneous

Fred E. Gott

Underdrainage	Wheat
	Cabbage

Jared Van Wagenen, Jr.

Soils	Corn
Fertilizers	Manures
Cover crops	Dairying
	Miscellaneous

B. D. Van Buren

Buckwheat

Lowell Roudebush

Weeds

F. E. Gladwin

F. Z. Hartzell

Grapes

O. M. Taylor

Cherries

Plums

Strawberries

Edward R. Minns

Soy beans

William Hotaling

Gardening

John Jeannin, Jr.

Flowers

E. E. Doty

Field beans

STATE OF NEW YORK
DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

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Questions

AT

Farmers' Institutes

PART I.

COMPILED UNDER THE SUPERVISION OF THE
DIRECTOR OF FARMERS' INSTITUTES

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“The art of agriculture will never rise higher than the level of the man who manages the land.”

W. H. JORDAN

INTRODUCTION

From their inception, a very distinctive feature of New York State Farmers' Institutes has been the "Question Box." This has not been simply a catch phrase on the program, but a "live wire."

The pioneers in this work, J. S. Woodward and Colonel F. D. Curtis, had the ability to both ask and answer questions in a way that made clear to the listener important facts. This was the method in vogue among the sages of Greece and Rome in the days of their highest attainments. In the beginning of the institutes, therefore, questions were put in the box, which would develop thought and answers imparting information. This both inaugurated the scheme and encouraged the people to prepare questions concerning matters of individual interest. As time went on it rarely became necessary for the speakers to insert a question, for the people were quick to see the value of this part of the institute. Frequently there are so many that it is difficult to find time in which to adequately answer them; but this is done, even though the addresses must be shortened.

The question box is the thermometer for the meeting, indicating the interest.

Often a speaker will omit a point, at other times he may mis-speak or not be understood, sometimes fail to make himself clear. The question box supplies a remedy in each case. Only a few subjects can be placed on a program. Here is an opportunity to introduce others of special interest. When one is answering a question he is speaking on a point of particular interest to some one — probably to several. This has done much to develop the New York State institute workers as well as to help those in attendance.

This volume has been compiled from questions actually asked in the meetings. Covering as they do practically the whole field of agriculture, it is sent out with the belief that the answers will be helpful to a larger number than is possible to gather at any meeting, and also that all interested may have for reference the written words.

In some cases the answers were written out, after being spoken. Most of them are the carefully thought out opinions of men of experience on the various subjects. They have been carefully revised, in order that any doubtful statement might be eliminated, and arranged in logical sequence: First, those relating to the soil — the foundation of agriculture; second, plants growing from the soil and their care; third, the animals subsisting on some of these plants; fourth, horticulture, the highest type of farming; fifth, those relating to the home — the aim and end of all that is highest and best, for the furtherance of which all the former things are simply a means.

EDWARD VAN ALSTYNE,
Director of Farmers' Institutes.



SOILS

Underdrainage

Manures

Lime

Cover crops

Commercial fertilizers

“ In considering the conservation of the natural resources of the country, the feature that transcends all others, including woods, waters, minerals, is the soil of the country.”

PRESIDENT TAFT

SOILS

*"Where grows? — where grows it not?
If vain our toil
We ought to blame the culture, not the soil."*

POPE

What chemical elements in the soil are used by plants?

Studies and experiments have shown that at least ten chemical elements are needed for the proper growth and development of plants, viz., nitrogen, potassium, phosphorus, magnesium, sulphur, sodium, iron, chlorine, silicon and calcium. Plants require nitrogen, phosphoric acid (phosphorus) and potash (potassium) in larger amounts than any of the other elements mentioned.

What would be the expense of having soil analyzed? How much soil should be sent and from what depth should the sample be taken?

The process is of such doubtful merit that only in exceptional cases will the experiment stations analyze soils. When they consent to do so it is without cost to the farmer. Of course he could have it analyzed by a chemist, the expense of which would be not less than five dollars. Soil analysis is not of very great benefit, owing to the fact that although the chemist can determine how much of the different forms of plant food are present, he cannot tell how much is available for the plant and how much locked up. This must be determined by the character of the plant growing on the soil. At least a quart is necessary to make a suitable analysis, which amount should be taken from the upper strata, from six to ten inches deep, according to the depth at which the soil is capable of being worked. It should be taken with a hollow tube from different parts of the field.

Of what benefit would a soil survey be to farmers?

A soil survey determines the general character of both the surface and the subsoil in a community, and its natural adaptation to various crops. This is the chief benefit of a survey, as many men are attempting to grow crops on land unsuitable for them because of its formation. The idea that a soil survey or

analysis will enable the farmer to determine just what kind and the amount of fertilizer to use is entirely erroneous.

How can we tell what a soil needs?

It is impossible to tell what a soil needs without plot experiments with different fertilizers. Chemical analyses alone cannot settle this problem.

Would it be practical for a farmer, or several farmers clubbed together, to engage a soil expert to test the different soils on their farms; the knowledge thus gained to be used in making a selection of fertilizer for the soil tested?

It would be of little use to have a soil expert come from a distance to make a casual examination of the soils of a farm. Knowledge of soil must come from plot experiments rather than from laboratory analyses. At the same time, a man familiar with observing these conditions might, by an examination of the soil — its character, the natural vegetation and the crops that were growing — be able to give valuable suggestions as to the probable course of treatment to be followed.

Please explain difference between a sour and a worn-out soil, and give treatment for each?

Some soils may be deficient in plant food and yet may not be acid and may not stand in need of lime. Soil acidity is a complex and difficult chemical question which the chemists themselves do not claim to fully understand. There are, as we know, certain soils which redden litmus paper and which we call acid soils. The application of lime will generally correct this acidity, and will bring about conditions which enable plants to grow better. Clover and alfalfa especially seem to do poorly on soils which are acid. Poor soils are frequently acid, but soils may be poor and still not be acid.

Will old land grow good crops,—land that has not been plowed in years?

While land that has been untilled will often produce excellent crops when broken, it is apt to be acid because, being compact, there has been no chance for air and sunlight to penetrate. Such land is usually benefited by a dressing of lime. If vegetation has been allowed to grow and decay on these lands, they will contain much available nitrogen which will go a long way toward insuring a crop after they are broken.

Is sandy soil more difficult to keep in condition than clay? Does it take more fertilizing?

Sandy soils are ordinarily less fertile than the poorer class of clay soils. To begin with they contain less actual plant food. Then again, they lose their plant food more readily by leaching and do not retain water as well as do the heavier clay soils. For these reasons it is generally recognized that very sandy soils are of low agricultural value. We must not forget, however, that there are a few crops which reach their best development on our light soils, and that these soils have special value for special purposes.

Can a light, sandy soil be made more productive at less expense than a heavy, clay soil?

It is generally true that the better class of clay soils are more productive; endure careless cultivation for a greater period of years, and are, on the whole, more valuable than the lighter sandy soils. At the same time, a light soil responds more quickly to manure and probably can be brought up sooner than the heavy clay.

Will the continued use of silo feed add acid to the soil?

No. It can have no conceivable effect in this respect.

Does the growth of sorrel indicate an acid soil?

It is generally agreed that the growth of sorrel indicates a soil which is acid and which needs lime.

Is there any way to remedy an acid condition of the soil except by the use of lime?

No. The cause for the acidity of the soil is quite complex chemistry and is not fully understood.

Is gravel soil necessarily poor soil?

Gravel soils are not necessarily poor. They are commonly well drained, which means that they are light and quick and have their special value for certain crops. Gravel soils, as a rule, do not stand long years of tillage as well as do the clay soils. It is an important question also as to what is mixed with the gravel. Sand gravel will not be nearly as good as a gravel where the stones are imbedded in clay.

Can you get soil too loose for the good of the plant?

Yes. Some plants demand a compact soil. Soil should be broken up into small crumbs or granules, but these should be pressed so closely together that the air does not circulate too freely, and so that capillarity may act between one soil particle and the next to bring up water from the soil reservoirs beneath. The ideal soil for plant growth is the soil which has been mellowed and fined and then compacted by tillage and rolling.

Will sand used on clay land be more beneficial than manure?

To attempt to improve the character of any considerable area of clay by drawing sand upon it, would be so expensive as to be entirely out of the question. When we remember that the surface foot of an acre of land weighs from 1,500 to 1,800 tons, we can understand how slight an effect would be produced by the addition of a few tons of sand per acre.

Are we to understand that hardpan soil is not deficient in potash?

Hardpan soil commonly contains fully as much potash as does the fertile surface soil. However, it is perhaps in a less available form. As far as the mineral elements are concerned, subsoil may be rich, but it is nearly always deficient in humus and hence in nitrogen.

What is the best book on soil fertility?

Four good books on soil fertility are: Professor Roberts' "Fertility of the Land," Professor King's "The Soil," Professor Hilgard's "The Soil," a rather technical and expensive work, and Professor Agee's "Methods for Soil Improvement."

How can the fertility of the soil be maintained where no stock can be kept, and what rotation of crops will be best?

It is one of the problems of agriculture to maintain fertility when no stock is kept. It must be done by a system of purchased fertility used in connection with cover crops and green manures, unless stable manure can be purchased cheaply without too long a distance to haul. If this system is to be followed, we must expect to depend largely upon leguminous plants for our nitrogen, and upon lime and acid rock and muriate of potash for our other purchased plant food. Every possible opportunity

must be taken to return vegetable matter to the soil, and while it takes a leguminous plant to add nitrogen, it may be remembered that rye, buckwheat, rape,— in fact, any plant that will grow — will assist in the maintaining of the all-essential humus supply.

What is the best method for making a clay knoll productive?

A clay knoll, like any other poor soil, generally stands in need of both humus and fertility. Our high, dry lands are generally especially deficient in humus. The use of commercial fertilizers without any attention to the question of vegetable matter is a search for success along wrong lines. Clay should have fertility either in the form of fertilizers or farm manures, but if farm manure is not available some system of cover crops or green manures must be used with the fertilizer.

Which would be cheaper, to buy manure to bring up a poor field, or plow under two crops — say one of rye and one of buckwheat?

The purchase of manure is generally an expensive way to buy fertility. It means not only money paid for manure, but it commonly means a good deal of expense in the way of hauling and distributing. Under these conditions, it is probable that a system using chemicals along with rye, buckwheat — or better still, clover or vetch — is the more feasible way to improve the soil. The improvement of soils without the use of the animal is a proposition which has many serious difficulties.

If soil was properly tilled, and the right rotation of crops practiced, could soil fertility be maintained by the use of phosphates only?

We must remember that not only the question of plant food, but also the question of humus must be considered. If no stock is kept, humus must be maintained by the growing of cover crops and the use of green manures. More potash will be continually needed.

How long may phosphates be used without harming the soil?

There is no real foundation for the popular idea that commercial fertilizers injure land. Of course, we must remember to use them in combination with manures or green crops in order to keep up the humus content of the soil. If this is done, there is no reason why we cannot use them indefinitely.

Will a crop of potatoes impoverish the soil more than a crop of ensilage corn?

A large crop of ensilage corn will remove from the soil rather more fertilizing constituents than a comparable crop of potatoes. At the same time, the corn will leave a greater amount of stubble and roots combined and probably will not tend to impoverish the ground any faster than the former crop.

Does the humus in the soil help to make it fertile?

Humus is one of the great factors in soil fertility. In the first place, the nitrogen of the soil is very largely associated with the humus, and soils that are very low in humus are also low in nitrogen. Humus is of great value as adding to the water-holding capacity of the soil. Then too, humus improves the texture of the soil, making it more friable than it would be otherwise. It is not too much to say that the agricultural value of a soil is almost as much dependent upon the humus content as upon the nitrogen, phosphorus, potash and lime.

How much is a ton of straw worth to plow under, and what kind of straw is worth the most?

It is impossible to say how much a ton of straw is worth to plow under, because we are dealing with two different questions. The chemist can tell you with exactness how many pounds of each element of fertility is contained in a ton of straw, and he can tell you at what cost you may buy these elements in the market; but he cannot tell you the value of the humus which this straw will produce. A ton of straw plowed under on an upland knoll deficient in humus, will certainly be worth more than that same ton of straw plowed under on a piece of muck ground, which has already as much humus as it really needs. We can translate fertility into terms of dollars and cents, but no man has yet even ventured to try to name the value of a ton of humus, nor do we know in the decay of a ton of straw how much of it becomes humus or how stable humus is in the soil.

Can land be injured by sowing it to buckwheat year after year?

Sowing land to any one crop year after year is always a bad practice, unless some very special reason exists for doing so. Buckwheat is a rather hard crop on land, not because it takes out special quantities of plant food, but because it has a very small root system, and hence leaves very little material to be

converted into humus. Land unquestionably would tend to deteriorate if put into buckwheat year after year.

Having no barnyard manure, what can be grown to advantage on a seven-acre tract which has been cropped for the past four years with buckwheat, commercial fertilizer only being used? Can this be seeded down to rape and plowed under later, then seeded to buckwheat?

Rape is a crop which will not make any large growth except on rich, moist soils. Either buckwheat or rye will give more vegetable matter on soils which have been depleted. It will be wiser to sow buckwheat early in the season and plow it under shortly after blooming and immediately fit the ground and sow to rye, allowing it to stand until nearly ready to head out, when it may be plowed under the following season.

Can the fertility of the land be retained when a three-year rotation of beans, wheat and clover is practiced, without stable manure, if the second crop of clover is left on the land?

The land would probably "hold its own" but would not increase in fertility. Potash and phosphoric acid should be added.

Will a rotation of crops consisting of oats, clover and corn improve or diminish the fertility of the soil?

We cannot expect to indefinitely grow any rotation of crops without diminishing soil fertility, unless we take pains to replace lost fertility. Of course, the growing of leguminous crops helps out the nitrogen question, and soil depletion would not come as quickly as it would otherwise; but at the same time, there is no system of continuous croplage without supplying fertility from outside sources.

Taking humus into consideration, what value per ton have cornstalks for plowing under?

A ton of corn stover contains about twelve pounds of nitrogen, eight pounds of phosphoric acid and about twenty-two pounds of potash, or say about \$2.35 worth of fertilizing material. It is entirely impossible to attempt to place any value upon humus, but we know that there are many soils where the need of humus is certainly not less than the need of chemical plant life.

Does selling hay rob the farm more than selling grain or other produce?

We have passed the stage of agricultural teaching which says that it is an agricultural crime to sell a ton of hay. The wise

farmer will always expect to sell his choice timothy hay, or his wheat, or his buckwheat; but on the other hand, he will expect to buy nitrogen, feeding stuffs, or commercial fertilizers in amounts sufficient to more than make up for the products which have been sold. It is probably true that the selling of timothy hay tends to deteriorate a farm more rapidly than does a system of grain farming alternated with clover in the rotation.

In raising a crop of buckwheat or oats, what effect will the sowing of plaster or slaked lime with phosphate have on the crop — say 200 pounds of each to the acre? Will the phosphate have the same benefit as when used separately?

No particular benefit should be expected on this crop from the plaster and comparatively little from the slaked lime. In any case, the 200 pounds would be so small that it would scarcely be worth the labor of application, to say nothing of the first cost. Neither will have any effect on the phosphate.

What is a good fertilizer for a garden where stable manure is not obtainable?

It is entirely impossible to say regarding any particular soil just what elements of fertility or what formula should be used. Knowledge of this kind can come only from actual experimental work on the soil in question, but we are at least safe in saying that where farm manures are not available, special attention must be given to the question of cover crops and green manures. There must be decaying vegetable matter in the soil from some source.

Which is best for a poor, run-down soil, lime, fertilizer or salt, and about how much per acre would attain the best results?

This question is much like asking what would be best for a starved and exhausted man,— food, drink or sleep. Some soils which contain sufficient lime may be very deficient in nitrogen, phosphorus and potash. If so, the use of lime is unnecessary, but soils which are deficient in these three elements cannot be restored by the use of lime. No good reason can be given why salt should have any especial value as a fertilizer.

The amount of fertilizer to be used per acre will vary with the character of the crop. Cabbage growers on Long Island use 2,000 pounds of high-grade fertilizer and say it pays, but it would not do to use any such amount in growing a low-grade crop like grass or oats. The value of the fertilizer must have a

certain relationship to the value of the expected crop. 250 pounds per acre might be a suitable application for growing oats, but it would not be considered anywhere near sufficient for growing onions. Thirty dollars worth of oats per acre is a very satisfactory yield, and it is not at all impossible to grow \$400 worth of onions on the same area.

What is the quickest way to bring up poor or worn-out land at the least expense?

It will depend upon local conditions. Some soils need drainage as the very first step in their improvement. Other poor soils are naturally drained so well that tile would be of no especial use. Nearly all poor soils need not only plant food but humus as well. Plant food may come out of a bag; humus can come only from animals or cover crops, so it will be largely a question either of keeping animals and returning their manure to the soil along with fertilizers, or else it will be a question of growing leguminous crops and plowing them under, and in addition to that the application of phosphorus, potash and lime.

What should be done with a poor, light, sandy soil?

What is true of a poor, sandy soil is true of all soils; they usually need not only plant food but humus as well, and this must be supplied either by a system of animal husbandry and a careful saving and application of manure to the land, or else by the use of cover crops and green manures together with purchased plant food.

When the rootlets of the plants cannot receive it, will the readily dissolved food wash away and evaporate?

The answer to this question depends upon what elements of plant food are referred to. It is true that nitrogen in the form of nitrates is leached away in the soil and lost, unless there is a living plant there ready to seize and hold it. In the case of potash and phosphorus, however, this loss does not generally occur. For instance, where a field is heavily manured an examination of the drainage waters will show the presence of considerable amounts of nitrates, but very small quantities indeed of either phosphorus or potash. The lesson from this is that phosphorus and potash may be applied at any time of the year and will remain in the soil until the plants are ready to use them,

but nitrates should be applied only at the beginning of the growing season when there is a plant prepared to absorb them.

What is the principal source of nitrogen in soils?

All the nitrogen in the soil is the result either of plant growth or of slight amounts brought down from the atmosphere in the rain. It is never derived from the decay of rock as are the other elements of fertility. The atmosphere, especially in the vicinity of cities, contains a little ammonia and other forms of combined nitrogen, which come down in the rain and snow. Then the nitrogen-gathering plants of the legume family together with certain bacterial organisms, act as nitrogen gatherers.

As we know, there is an inexhaustible supply of nitrogen over every acre of soil. Why is it not available to the great family of plants?

While it is true that there is a practically inexhaustible supply of free nitrogen over every acre of land, yet the facts are that this is not of direct use for the growth of the plants, except in the case of the leguminous plants. Other plants take their nitrogen in the combined form only. This is the reason why agricultural writers are forever urging the more extensive use of the legumes in our agriculture.

Would there be danger of losing much of the nitrogen if sufficient nitrate of soda were applied in the spring to grow full crops?

Nitrate of soda is likely to be lost from the soil if there are heavy rains and if no growing crop is present.

Why is it more practical to spread manure on new seeding than to apply it on corn or potato ground?

The practice of top dressing meadows is surely growing in the dairy districts of New York State. It results in growing larger hay crops than ever before, and also in having such heavy sods to plow under that the decay of the roots and stubble affords the necessary fertility for growing corn and potatoes. It also tends toward abating weed troubles; this is especially true in districts where yellow mustard is a pest.

When all the necessary elements are in action, changing to make corn or wheat, and one becomes exhausted, what stops the action of the others?

Plants cannot grow unless all the elements which they need are present. Some elements found in very small quantities are,

nevertheless, just as necessary to plant growth as are those which occur in much larger amounts. So when the supply of any element is exhausted, growth necessarily ceases from lack of the needed element.

Why is warmth necessary to complete decay?

Decay is due to the action of certain forms of bacteria which break down the tissues of the plant, and bacterial action takes place far more rapidly at high temperatures than at low. For example, at freezing temperatures bacterial action is practically stopped, whereas at temperatures as high as 100 degrees it develops very rapidly. Railroad ties rot in Florida in less than half the time they do in New York State.

Is a rotation of corn, oats and hay good?

This is the standard rotation of the New York State dairy farm, and it is probably the one which is best adapted to New York State conditions.

Which is the harder on soil, oats or beans?

Beans have the advantage of all leguminous plants in that they gather some nitrogen from the soil air — something which the oat plant does not. We should not, however, make the mistake of thinking that, because a plant gathers nitrogen from the air, we need not bother ourselves with the question of soil fertility. The question of potash, phosphorus, lime and other things still remains.

How does the presence of water affect the temperature of soil?

The temperature of the soil is always reduced by the presence of water, and water-logged soils are always cold. The reason is that the evaporation of water takes heat, and the heat of the sun which otherwise would raise the temperature of the soil is used up in the evaporation of water. Experiments have shown more than ten degrees difference in temperature between well-drained and water-logged soils in the same field, in the early spring.

How does rain help or injure the fertility of the soil?

There is no more important factor in plant growth than an abundant water supply. Rains may be so excessive as to puddle

the soil, thus shutting out the air, and also may lead to leaching away of plant food, but in New York State we are generally short of water during the growing season.

How does the action of the water help the plants to grow?

The great function of water in the growth of a plant is as a carrier of plant food. Plants can use fertility only when it is dissolved. As some one has put it, they take their food in the form of soup, and it takes large amounts of water to dissolve even small amounts of relatively insoluble plant food. There are, of course, other functions performed by the water, among which is that of giving plumpness and strength to the plant tissues. Everyone has noticed how rapidly a plant wilts on a dry day as soon as its supply of water is cut off from below.

Is not salt worth something when applied to the surface of the soil for the purpose of keeping the soil moist during a dry time, especially on a surface growing a crop such as onions?

The general belief is that salt has no particular value as a plant food. It almost certainly has no value as a retainer of moisture. The amount of moisture that could be taken up by a few hundred pounds of salt distributed over an acre is too small to be considered.

Does it injure land to plow it when wet?

Any man who has had experience in handling heavy clay soils knows that it is a most serious error — the effects of which may last for years — to plow them when in a water-logged condition. Clay plowed too wet simply bakes into brickbats in the sun, while if plowed just at the right stage it breaks down into a beautifully soft, friable seed bed.

What is the need of the thorough tilling of the soil to obtain a good growth of plants?

There are three fundamental reasons why it is necessary to cultivate the soil. First, the cultivation of the soil conserves the supply of water, and under New York State conditions we are generally in need of more water than we get. Second, the cultivation of the soil destroys weeds which otherwise would rob the plants of food, sunlight, fertility and water. Third, the cultivation of the soil sets free the plant foods which are locked up in insoluble forms.

These three are the principal reasons why it has long been recognized that the well-cared for corn crop is the one which stands the drought well and gives good returns at harvest time.

Is six inches for turf and eight inches for stubble any too deep to plow?

No, not under ordinary soil conditions.

Will deep plowing improve the fertility of the soil; that is, plowing deep enough to turn up some of the subsoil? How much deeper than the previous year should the soil be plowed?

Probably it will not be well to go more than an inch or two deeper than the last plowing. It will depend, however, upon the



Deep Tillage

natural character of the soil and how much fertility is available. In some cases deeper plowing may be actually disadvantageous.

Does it pay to plow deep on heavy soil, clay and hardpan?

In a general way, we should always plow fairly deep. New York State farmers as a rule are not plowing deep enough. Deep plowing is expensive because it is slow and takes a con-

siderable quantity of horse power; nevertheless it pays on many soils. At the same time, thin soil should not be plowed so deep as to rip up large amounts of the subsoil.

What are the advantages of subsoil plowing?

The practice of subsoiling was much written about and talked of a generation or more ago, but it is a decaying practice of our agriculture. Most men seem to have concluded that it is better and cheaper to break up the subsoil by growing clover or other deep-rooted plants, than to try to break it up with the plow.

Does it pay to summer fallow?

Summer fallowing was at one time in great favor among the best farmers, and is still an efficient method of killing weeds and securing splendid conditions of tilth and moisture. It involves, however, loss of the use of the land for one season, and the farmer has come to believe that, as a practice, it is too expensive. Our improved agricultural implements enable us to dispense with it.

If bare ground loses fertility, should we fall plow?

There is no question that ground lying bare during the winter tends to lose plant food; yet on the other hand, the advantages of fall plowing are so great, especially in heavy clay soils, that it is probably a wise practice on most New York State lands.

What are the advantages of fall plowing?

The greatest advantage of fall plowing is that the action of the frost, especially on clay soils, gives a tilth and fineness of condition in the spring which generally cannot be secured by spring plowing. This does not apply to light soils with considerable sand in their composition. Another advantage of fall plowing is that the soil retains a greater proportion of the winter rainfall than would be retained if the land lay unplowed. Another factor is that fall plowing is a partial remedy for certain insect troubles, notably the wireworm and other underground larvae.

Does fall plowing render the ground less susceptible to drought than if plowed in the spring?

There are two reasons why fall plowing, especially in the case of clay soils, tends to make it withstand drought better. First, the fall-plowed soil generally retains a larger proportion of the melting snows and heavy spring rains, because the water does not run away as readily as it does from an unplowed field. Second, we generally secure a finer tilth in the fall-plowed soil, which means that it is better protected from the drying winds and loses water less rapidly.

For what crops do you advise fall plowing?

Fall plowing is especially to be recommended for oats, and for those crops which need to go in early in the spring and make their growth while the soil is still moist and cool. Oats, for example, should be put in at the earliest possible moment when soil and weather conditions will permit, and this means that fall plowing is of very decided advantage.

How would you proceed to prepare a piece of gravelly soil for a crop of corn? When and to what depth would you plow; how apply the fertilizer, and at what distance apart should the rows be sown? Please give such information as will aid in producing a reasonably fair return.

This is a very big question. Ordinarily, under New York State conditions, corn should be grown upon sod lands; the place generally given it in our rotation. The land should be plowed either in the spring or fall, as deep as practical without bringing up hard subsoil from beneath. Corn makes especially good use of farm manures because it enjoys plenty of decaying vegetable matter and because it seems to be able to use fertility in this comparatively insoluble form. The manure may be applied during the winter and plowed under in the spring, or perhaps better results will be obtained by applying it on the furrow after plowing, and harrowing it in.

The distance apart of the rows of corn will depend largely upon the variety planted. If small state corn is used, three feet apart is wide enough; on the other hand, if the larger dent varieties are used, it should be not less than three and one-half feet each way.

Are stones beneficial to land or should they be removed?

Stones should always be removed, not because of any injurious effect upon the land, but simply because they have no place where we want to use modern cultural implements.

What is the best way to handle wet clay soil?

Wet clay soil, or any other wet soil, needs drainage as the first preparation for growing a crop. Soils which have been wet, when drained generally prove to be rich both in plant food and humus. Indeed, our reclaimed marshes are the best soils known. Heavy clay soil may not be suited to certain crops, even after drainage. Very likely it will have its highest value for meadow purposes, and it may be practical to keep it permanently in grass by a system of top dressing. However, if the drainage is well done, there may be no reason why all our ordinary farm crops may not be grown.

How may the cutting of deep ditches by water be prevented?

The question of washing and gullying of farm lands is very largely dependent upon the character of the soil. Some soils, notably those of our southern states, wash very easily. As a rule, the less vegetable matter a soil contains and the less plant roots present to bind it, the more readily it will wash. The lesson from this is that hill lands which wash and gully should be kept in grass, so that the covering of turf may protect them. In addition to this, something may be done by a system of furrows designed to distribute and carry off the water and not allow it to accumulate in one place.

How often should sidehills that wash be plowed?

Sidehills that are very steep and wash badly should be plowed as seldom as possible. This means that they should be kept in grass, and that dependence for renewals should be based upon top dressing and sowing grass seed upon the thin places, rather than upon plowing.

Are the new riding plows a success?

Men differ as to the value of the riding plows. They secure a uniformity of depth in plowing and a perfectness of work not generally attained by the walking plow; but they take substantially more power to handle, which means heavier teams,

and most men doubt the advisability of their use on rough hill lands.

Should a field be plowed so that the furrow will stand on edge, or should the furrow lie flat?

On compact clay soils at least, it is better that the furrow should stand partially upon edge rather than be turned down flat. It will retain more water in the spring rains if fall plowed, and will give a better chance for the harrow to take hold and loosen it up; also, it will retain a better capillary connection with the lower soil than if the furrow is turned with the sod upside down.

What plow should be used to leave the furrow edgeways?

Some of the larger manufacturers make different types of plows, some of which are designed to lay the furrow flatter than others. It is dependent more upon the plowman and upon the depth and the width of the furrow than it is upon any particular plow.

We have a field on which corn was grown last year and the field plowed last fall; what treatment should it have before sowing peas and oats for a forage crop, and when is the proper time to sow?

As soon as the ground is fit to work in the spring go over the field with a cutaway or spring-tooth, thoroughly working it up; then drill in two and one-half bushels per acre of Canada peas and oats, mixed half and half. Set the drill as deep as possible and sow as early as the land will permit; both are cool weather plants and do best before the heat of the summer. It is probable that the addition of two or three hundred pounds of a complete fertilizer will be a benefit, unless the land has been previously manured, when only phosphoric acid and potash will be needed. This crop will make excellent forage, but to have it at its best it should be cut when the peas are in blossom and while the oat head is just forming. Left longer than this the straw becomes woody and the mature peas and oats are hard and seldom eaten by the stock.

Does rolling the ground help or injure the growth of the crops?

The roller has its place on the farm. It may be helpful for use on the meadows in early spring to force back into place some grass roots which have been lifted out by the frost. It

may be used to press small stones down even with the surface of the soil, and is frequently of great value in helping seed to germinate when sown in a very dry time. On the other hand, it is a mistake to roll fields which are already moist, as it may lead to a serious loss of moisture by evaporation when used. It may also compact the surface into a hard covering.

Does it pay to roll land after sowing?

There is no question but that in a dry time better germination of seed will be secured by rolling, because it compacts the soil and increases capillarity between the subsoil and the surface soil; thus bringing up water from beneath and helping the seed to germinate. It is generally wise to go over the rolled surface with a weeder or slant-tooth harrow to prevent the loss of water.



UNDERDRAINAGE

“The matter of ditching, even, is so much of an art that both intelligence and experience are required to do it well.”

F. H. KING

What, briefly, is the value of drainage to land and the comparative value of the methods employed—the open furrow by plowing, or tiling; and what is the expense and the duration of the latter method?

Drainage, together with the addition of organic matter, tends to increase the productiveness of a soil by restoring it more or less closely to its original virgin condition. When the escape of an injurious amount of water was provided for through the channels made by the roots of trees, when the soil was filled with decaying vegetable matter which permitted the water from rains and melting snows to filter rapidly through without becoming cold and stagnant as it now does in the long-cleared and long-cultivated lands, or when we, by artificial means, restore as far as we are able the conditions that originally existed, we find that nature is ever able and willing to respond to our efforts and reward us in a manner that is often surprising. The amount of water commonly known as film moisture is all that is necessary in most cases for the best growth of such crops as we cultivate; and the water which remains in the soil after heavy rains or melting snow, filling the spaces between the soil particles to the exclusion of air, oxygen and warmth, should be gotten rid of as soon as possible, so as not to interfere in any way with nature's complex operations by which she encourages and perfects the growth of a plant. Open furrows do not accomplish this. A system of tile drains may, at first sight, appear expensive, but often pays for itself in the first crop and is to all human intents and purposes permanent.

How does drainage ventilate the soil?

By rapidly removing the water from the spaces between the particles of soil. Nature abhors a vacuum, and air rushes in to fill the spaces left vacant by the water.



Ditching Machine in Operation

Will thorough drainage and cultivation take the place of fertilizers?

Thorough tile drainage of a field often solves the fertility problems of that field for years to come.

Will it increase or diminish the effect of drought?

Thorough drainage will greatly diminish the bad effects of a drought. A well-drained field is practically independent in both very wet or very dry seasons.

If a field is on high land, inclined to be dry and rather shallow, with an average of six feet above the rock, would tile drainage equalize the moisture?

Probably it would, but there are unknown factors in this case which would have to be understood before giving a positive answer.

Is it best to underdrain moist land for corn?

It pays to underdrain moist land for all crops.

Which is more economical and lasting, tile or surface drainage?

Surface drainage merely facilitates the removal of surface water from the field and does not, to any extent, lower the watertable. Neither does it aerate or ameliorate the soil to any depth below the bottom of the surface furrows, while systematic tile drainage removes surplus water *out of* the soil, admits air and warmth and, incidentally, removes the

surface or standing water nearly as rapidly as an open furrow would remove the same. A surface stream has many soil particles and much fertility in suspension. The discharge from a well-constructed tile drain is practically filtered water, and little fertility is removed. Surface drainage is often a necessary precedent to systematic tile drainage, since much surface water would greatly interfere with the construction of the ditches for the laying of tiles.

What is the best method of tile draining?

Use of tiles of suitable size laid at the proper depth and distance apart, in parallel lines, wherever practicable, and up and down the steepest slope of the field. There should be as few outlets as possible, and those outlets so constructed as to give free discharge of the water and prevent the entrance of animals or vermin.

Why not run ditches diagonally instead of vertically up and down the slope?

Diagonal drains would draw very little water from the soil on the lower side of the drain. The subsoil does not always lie conformably with the surface soil after pockets



are formed by the folds of subsoil that are not tapped by the diagonal drains. All of these things are generally perfectly accomplished by the drains which run directly up and down the slope.

Should lateral drains be run into the main drain at right angles?

Wherever possible, run the lateral into the main drain at an acute angle, thirty degrees or less. The main drain should be graded a little lower than the laterals.

How deep should drains be put in on a gentle slope with not very hard subsoil?

Drains should be placed deep enough to be able to lower the watertable or line of saturation to a sufficient depth over the entire drained area to insure the best conditions possible for the growth and development of the root system of cultivated plants. The watertable will always be nearer the surface of the land midway between parallel lines of drains, and the drains must be deep enough and near enough together to give a sufficient depth of drained soil area. I have seen fields where tiles were laid 18 inches deep and 40 feet apart. The good effects of the drainage in this case extended about 8 feet on each side of the drain, while the land between this area was no better than it was before the tiles were laid.

Would you recommend filling the ditch with stones?

No. Let the water filter through earth into the tiles. Avoid placing stones, gravel or other porous material over the tiles in the operation of filling.

Does water soak through the tile or go through the joints?

Water gets into the tile through the joints, not through the tile. Surface water should not be allowed to enter tile drains except as it filters through the soil.

Is it advisable to place straw over tile in the ditch?

No, place nothing but clay or dirt over and around the tiles. In case a close joint cannot be made, use a strip of tin, sheet iron or tarred paper to cover the joint.

Do you advise placing boards under the tile?

Not where a floor can be obtained otherwise. It has to be done sometimes in wet quicksand.

Why begin to lay tile at the outlet of the drain?

There are many disadvantages in beginning at the lower end. It is very important that the outlet should be free and unobstructed; beginning at the inlet, the tiles can be graded, laid and covered each day; when springs or wet pockets are tapped a free outlet for such water is provided; should a heavy rain come, the upper portion of the drain being laid, were there obstructions below, it would result in the filling of the tiles so laid.

Will freezing of the ground disturb a system of tile laid two feet deep?

Not often; they are safer at three feet, however.

Will tile draining prevent or lessen heaving on clay loam?

Good tile drainage will almost wholly do away with heaving of the soil.

What is the best way to put in an outlet to tile drainage so it will not freeze up?

The outlet of a tile drain where the discharge is into a stream or open ditch should, wherever practicable, discharge above high water. It should be laid with concrete or masonry, the entrance guarded against rats and other vermin by perpendicular iron rods embedded in the concrete and in front of the opening, and it should be examined at least twice each year and any obstruction cleared away. If these precautions are observed there will be no danger of injury from frost.

What factors must be considered in determining the depth at which drains are to be placed?

1. Character of the soil
2. Fall obtainable
3. Depth of soil above subsoil
4. Contour of field
5. Outlet

They must be deep enough to insure a sufficient lowering of the watertable of the whole drained area.

Is it better to tile deep with laterals at quite a distance apart, or more shallow and not so far apart?

There is no fixed rule that will apply to all cases. Other things being equal, the deeper a drain is laid, the wider will

be the area drained and the more effective will be the results obtained. In an average loam with hardpan subsoil, tiles laid three feet deep will effectually drain a strip of land forty-five to fifty feet in width; at four feet deep, about sixty feet in width, etc. These estimates will vary, of course, with the character of the soil, the grade and other considerations.

Which is preferable, a drain 2 feet deep with a fall of 4 inches per 100 feet or one 3 feet deep with a fall of $1\frac{1}{2}$ inches per 100 feet?

Other considerations being equal, the latter unless the tile must go deep in the hardpan.

Would you advise tiling where the tile could be laid not more than two feet deep?

I would, but at that depth the drains would need to be much closer together. Wherever a good outlet can be obtained it is usually better to have drain deeper, although there are some soils that would be more effectively drained by placing the drains two feet deep and twenty feet apart. Such cases are rare, however. Always use hard tile for the shallow ditches.

When the drain is on a sidehill, how far on either side of the tile will the soil be drained?

From ten to forty feet.

How can a piece of land having no slope be drained?

Whenever an outlet can be obtained, a perfectly level field can be thoroughly drained. If a tile drain could be laid absolutely level, there would still be a fall equal to the inner diameter of the tile. A ditch may be so graded as to give a sufficient fall on a level field.

How much fall to the hundred feet is necessary for tile drainage?

The greater the fall the more rapid will be the removal of the surplus water; but drains with a fall of one inch to the hundred feet, when perfectly graded, are, in many instances, accomplishing perfect work.

Where there is no water, would you advise laying the tile without a level?

Where the field is nearly level, it is better to use an instrument and so avoid irregularities.

How can the ordinary farmer get an even grade to the ditch?

Water running in the bottom of a ditch would be a sure guide. When there is known to be plenty of fall, it is only a question of skill in keeping the bottom grade even. Where the field to be drained is very level, it would pay to secure the services of a competent engineer with his level.

Will tile drains put in 20 inches deep heave? (Cannot put them deeper and get outlet.)

They would probably not heave if carefully constructed; but in nearly every case it would be better to put them at a greater depth, even though a little extra expense is incurred in deepening the outlet.

What is the average size of the tile used in draining and for all purposes?

When no unusual conditions exist and the work is carefully done, a two-inch tile is sufficient for drains 50 rods in length with a grade of four inches or more per 100 feet. The capacity of a tile increases as the square of the diameter increases, with a slight allowance for friction.

How large a tile in a ditch would be required to drain fifty to sixty acres?

It would be impossible to answer this question without knowing more about the field in question; there are too many problems involved. It might be accomplished with a six-inch tile and it might require a sixteen-inch tile. Consult an engineer.

Are two-inch tile large enough for the laterals?

Ordinarily, yes, for fifty rods or less in length, if carefully laid.

Will cement tile give as good a result as a clay tile?

A cement tile or a vitrified tile will remove the surplus water from a field equally as well as a clay tile. Water finds its way into a tile drain through the joints, not through the body of the tile.

Are cement tiles made on the farm as economical as purchased clay tile?

The question of durability seems to be the only factor in this case, and there is every reason to believe that, where well-made of good material, they would be just as durable, effective and economical as any other tile.

What is the cost of tile draining for an acre of land?

There are many considerations that would enter into such an estimate. Some fields could be effectively drained for \$20 per acre or even less, while others would cost twice that amount.

If one can get tile ditch dug at an average depth of two and one-half to three feet, the tile laid and covered ready to fill with the plow at 30 cents per rod, with the additional expense of boarding the man, would it be better and more economical to pay \$250 for a ditching machine and do the work with it?

I should consider this a very reasonable price for excavating and covering the tiles, but under favorable conditions the machine would probably excavate for less money.

How can we afford to put \$50 worth of drainage into \$20 worth of sand?

If by means of \$50 worth of drainage the value of this \$20 land was increased to \$100, would it not look pretty good?

Would you advise a man heavily in debt to borrow money to drain a field that needs it?

It may be the only thing that will enable him to get out of debt. Tile drainage is a first-class investment. It often pays 100 per cent. the first year, and is a permanent improvement.

What should drain tile cost per rod or per 100 rods?

Prices of tile at the yards vary with different manufacturers, but are approximately as follows:

Inches	Cost per 1,000 feet
2 x 12 to 13	\$10 to \$12
3 x 12 to 13	15 to 20
4 x 12 to 13	25 to 28
6 x 12 to 13	40 to 50

The buyer should always visit or correspond with the manufacturers and obtain their prices. They will vary considerably from the figures given above.

Is it profitable to ditch with a ditching machine?

It is very profitable to drain the land, and any way by which the cost can be reduced is desirable. The large machines materially lessen the cost of extensive operations, but

they are expensive. Some homemade tools are very effective, and some moderate-priced machines are now manufactured that do excellent work.

When using stones for draining land is it better to throw in irregular stones promiscuously, or lay a throat with flat stones?

I do not think favorably of stone drains, but if used, by all means lay a throat and cover with flat stones. Thrown in promiscuously, they would answer only as a temporary make-shift and would soon become obstructed and out of commission. Good tiles are far more satisfactory, more effective and, generally speaking, are permanent.

Is the use of dynamite effectual in draining land that has a heavy clay subsoil?

Probably temporary benefit would result, but, as in the case of subsoiling, I should expect the clay to soon "puddle" and revert to its original condition unless a permanent channel (tile drain) were provided for the escape of water. In such a case I should expect to see permanent results.

How do you treat tile drains in quicksand to prevent sand from filling the tiles?

When there is much quicksand, the work should be done during the dry season, and a shovelful of clay placed over the joints of the tile. Where, during the operation, an area of wet quicksand is found, it may be necessary to lay inch boards on the bottom of the drain and lay the tiles on the boards. I prefer clay well rammed down to the boards, however. In extensive work of this kind it is better to use sewer tile made with a collar. They cost a little more than the common tile, but in the end are more economical.

How can a farmer drain his land if his neighbor below him will not open up a clogged drain?

It is always best for neighbors to adjust these matters in a friendly way if possible. Our state laws governing these conditions are very imperfect. If your neighbor wishes the surface water from natural, undiverted channels of your farm, there are ways by which you can, no doubt, accommodate him.

I wish to drain a wet spot in a field where there is a good fall — can run eight or ten rods and empty into a hole filled with cobblestones where the soil is dry and sandy and cover the hole, or can run 25 rods and empty into another line of tile. The former would be cheaper, but which would be the better?

The latter plan would have the advantage of draining an area 25 rods in length and probably three or four rods in width, with the further advantage of a better outlet.

In a piece of ground that is mucky which is better, a tile drain or an open ditch?

Remove the surface water by means of open ditches. When the land has dried out sufficiently, put in the tiles.

What particular use should be made of a deep muck swamp, tile-drained, which has been cultivated only one year and can be put under irrigation?

This soil is very rich in organic matter and nitrogen, and such crops as celery, lettuce and onions will do well. After a few years of cultivation with perhaps an application of potash, phosphoric acid and lime, good cabbage could be grown.

I have three creeks running across a ten-acre flat which I wish to lower to at least four feet. Would the large ditching plows which throw out the dirt do the work satisfactorily?

In this case, assuming that the channels for the creeks must be permanent, they should be made wide and with gently sloping sides, so that a team and wagon could pass across. A ditch of this shape could be made with a common scraper or, better still, with the large road scrapers that are used in many towns for grading highways. The ditching plows throw out a narrow trench suitable for tiles, but unsuitable for a permanent, open watercourse.

Will alfalfa roots injure tile drains two and one-half feet below the surface of the ground? Will the roots of apple trees interfere with the drain?

Where a perennial stream of water trickles through a drain, the roots of many plants will seek the water during a drought, and, once they get into the drain, mischief is sure to follow. They will not go into a tile where there is no water during the dry period.

Will draining land kill willows?

Willows thrive best in wet soil. Drainage would be one important step in the process of eradication.

A piece of ground which lies nearly level but does not seem to be wet in the summer heaves or freezes in the winter so that it kills grass. Is there any way to prevent it from freezing or heaving? What is the best kind of grass for such land?

Any soil which retains enough water near the surface so that it heaves and kills the grass plainly needs underdrainage. Well-drained lands do not heave badly, but much land which seems apparently dry enough in summer is really in need of drainage. The grass which is best adapted for this type of soils, is redtop; and alsike clover is far better than the red clover.

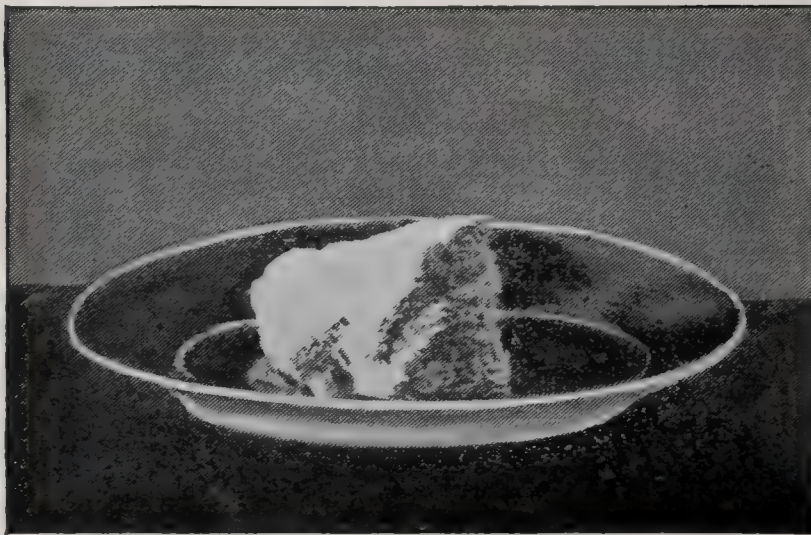
LIME

"When the land begins to need lime it is a waste of time, energy and money to continue cultivating it until this need is supplied, for the economical use of every other fertilizing material, including manure, depends upon the lime supply; if that is deficient, everything else must fall short of its possible attainment."

C. E. THORNE.

What are the functions of lime in the soil?

Lime has four functions, named in the order of their importance:



Lime before Slaking

1. It makes an acid or sour soil alkaline or sweet. Many plants, particularly those of the clover family, will not thrive on acid soils.

2. Lime is a liberator of the mineral plant food in the soil, helping to set free locked-up potash and phosphoric acid by carbonized soil water.

3. It has a mechanical effect on the soil, tending to make a hard soil more open and porous and causing the particles of lighter soil to adhere more closely together, in both cases increasing the water-holding power. It also helps to reduce organic matter in the soil, making it more equally available for the uses of the plant.

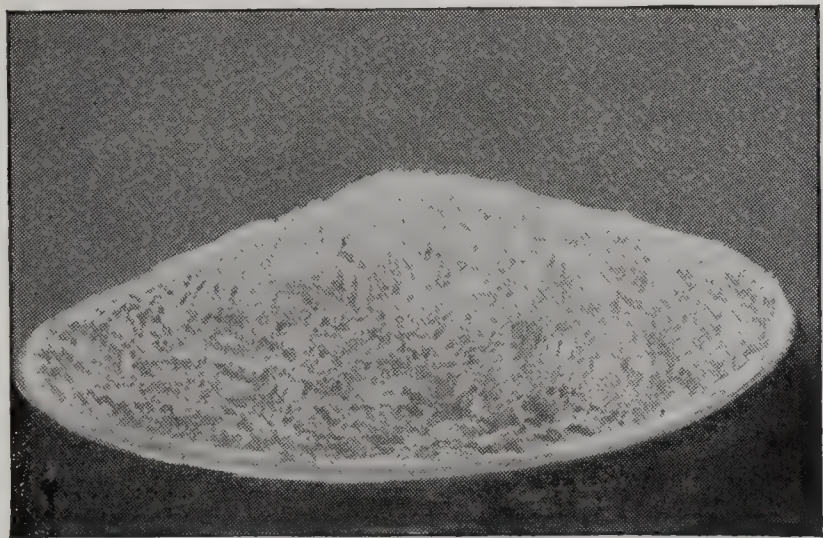


Same Lime after Complete Water Slaking

4. In some cases it is a needed plant food. A ton of alfalfa hay takes from the soil forty pounds of lime, clover fifteen to eighteen pounds. Unless there is this amount of lime available, these plants must necessarily suffer and sometimes fail for lack of this food element.

How may soil be tested to tell where lime should be used?

The litmus-paper test has been recommended as a means of finding out whether the soil is acid or not, and while it is true that in an acid soil blue litmus paper will turn red, yet this will take place in soils that are not acid enough to reduce the growth of clovers. The most



Lime Pulverized by Fingers after Slaking

practical test is to sow a liberal application of lime on a portion of the field previous to seeding with clover and then await results.

What forms of lime are most practical for the farmer to use?

The valuable element in any lime is calcium. The more of this one obtains in the lime, the more valuable it is. Burning limestone drives away the carbon dioxide, and a ton of caustic or freshly-burned lime of high grade contains approximately 1,900 pounds of lime in the form of calcium oxide. When burned lime is slaked by the addition of steam or water, it absorbs about 500 pounds of moisture and is then known as hydrated lime or calcium hydrate and contains between 1,400 and 1,500 pounds of lime in the above form. When the stone is simply ground without being burned and no gas driven off, there will be about 1,100 pounds of calcium in the form of carbonate. Thus it will be seen that in a ton of fresh-burned lime there would be nearly 2,000 pounds of the material needed, in the hydrated, only about three-fourths of a ton, and in the carbonate about 1,100 pounds. The

caustic lime is a little more rapid in its action and on the hard soils has greater mechanical effect. On light soils where the amount of vegetable matter is liable to be small, it may reduce this too rapidly. Hence, if the price per pound of calcium is the same, the caustic is to be preferred for the heavy land and the carbonate for the light; otherwise, it is largely a matter of first cost and fineness of material. The hydrated lime has the advantage that it is very fine, but if it is allowed to remain exposed to the air for any time, it becomes air slaked and ranks with the carbonate. For instance, if a ton of the quicklime can be purchased for \$6, the hydrated should be bought for \$4.55 and the carbonate or ground stone for \$3.40. If charges per ton in every case are the same, and if the haul is long, the oxide form is usually the cheaper.

Is a pound of actual lime in the form of carbonate of lime of more value than in the form of fresh-burned lime?

No, although sellers of carbonated lime tend to convey this idea. As a matter of fact, it is a little slower in its action and usually is more expensive.

Does not lime have to reach the carbonate form before plants can use it?

Any lime after remaining in the soil for a time reaches the carbonate state, but it must be hydrated before plants can use it.

Does burned lime come ready to put on land?

There are several burners of lime who grind it and send it out in this form ready to put on the land.

Is the common stone lime, slaked and sown, preferable to the prepared lime sold in sacks? Is the fine lime detrimental to the soil in any way?

The prepared fine lime sold in sacks is usually the hydrated lime. It is about on a par with the stone lime, water slaked, and is usually somewhat finer. This fineness is always desirable because it acts through a particle of lime coming in contact with a particle of soil.

Is not the effect and availability of lime determined very largely by its degree of fineness and the thoroughness with which it is mixed with the soil?

This is certainly true and never should be lost sight of.

Which is more profitable for a farmer who uses from ten to twenty tons of lime a year but who has no drill for spreading, to buy fresh-burned lime at \$5, or slaked and bagged at the kiln at \$10 per ton?

The fresh-burned lime at \$5 is far the cheapest in any case, and, presuming that it is in lumps, it can be placed on the field in small piles of about a half bushel each, covered with a little earth and in a comparatively short time will have become slaked so that it can readily be spread with a shovel. For all practical purposes one will get as much actual lime and as good results as to pay twice as much for the bagged lime, and this is not pleasant to apply. For the ground limestone at \$5.50 he would receive nearly half less actual lime in a ton.

Which is better — granulated lime at \$7.50 per ton or ground lime put up in 100-pound sacks at \$6 per ton?

This would depend wholly on the character of the particular lime. The terms as here used “granulated lime” and “ground lime” mean very little. Presumably they are both hydrated.

What is the method of slaking lime for soils?

Lime can be placed in large piles and water added by degrees, as it will absorb it without burning and so slake. Many follow this method and prefer it. Or it can be placed in little piles, as noted above, and in that way work out its own slaking. That which is sold as hydrated or slaked lime is slaked with steam by a mechanical device.

Will lump lime when slaked in piles in the field be in as good condition to sow as the fresh-ground, burned lime?

While lump lime slaked in piles will be in condition to sow broadcast, it is hardly safe to try to sow it in a drill without first sifting, as there are liable to be little, hard particles which would break the drill castings.

Is not the ground limestone on account of its slower working better in its results than slaked lime?

Experiments under entirely different conditions in Pennsylvania, Ohio and Maryland, where the same amount of actual calcium and the same money value was applied, showed that in each case the ground limestone gave slightly more profitable reports. The fact should be emphasized that the

ground stone was purchased at its relative value as compared with the other form.

Is lime as good as the phosphates we buy?

Lime and phosphates are entirely different. The former's functions have already been described. The latter have only the effect of supplying plant food, which is not found in lime. The use of lime itself pays well in many cases; whether it will in this case must be determined by studying what the functions of lime are and whether these are lacking in the soil and verify this by experiments on a limited acreage.

Does potash have any effect if used with lime?

The lime will have no bad effect on the potash nor the potash on the lime. Where this is needed it should be applied without regard to the lime.

Is not a ton of plaster as valuable as a ton of ground lime?

Plaster is sulphate of lime and entirely different in its composition. It has no effect in sweetening soil nor in liberating the ordinary forms of locked-up plant food. Its chief value is as an absorbent and a retainer of moisture.

What is the value of marl compared with burned lime?

Marl is a form of carbonate of lime yet it sometimes contains some potash, but the marls vary greatly in their composition. A high-grade marl is a desirable form of carbonate of lime.

What is the proportionate effectiveness of shell marl and quicklime in correcting acid conditions in soil?

Marl is a variety of lime commonly derived from the shells of minute animals allied to our snails and mollusks. If it were pure and dry, 100 pounds of it would be worth about 56 pounds of fresh burnt quicklime. As a matter of fact, it commonly carries a good deal of moisture and some earthy impurities. It is probably somewhat finer, and hence more available than raw ground limestone, to which class it belongs.

What is the difference between lime and ashes as regards price?

Lime and its functions are stated above. Good wood ashes should contain not less than 5 per cent. of potash and at

least 1 per cent. of phosphoric acid. Extra good wood ashes will contain not less than 8 per cent. of the former, 2 of the latter and 30 per cent. of lime. The combination made by nature in ashes seems to be a better one than man can make artificially, even when obtaining the same analysis. If lime is the particular thing desired from a standpoint of economy, one would better use it than the small amount in the ashes. If plant food is wanted and incidentally a moderate amount of lime, ashes are preferable, provided they are not too expensive. One should not pay more than \$10 per ton for an ash of the first analysis mentioned.

Which receives most benefit from ashes and lime — sandy or heavy soil?

As a rule the most beneficial effects will be noted on the heavier soils, yet in many instances the sandy soils show marked results after its application. Ashes would very likely be beneficial in the latter case. One can only tell by actual application in a small way.

Should lime be applied on wet land?

It is of very little use to apply anything to land that is water-logged. Such is bound to be cold and sour, and in any but very favorable times, unworkable. On such land the economical thing is to underdrain. After draining, because of the unfavorable conditions brought about, lime is of great benefit.

Do you advise using lime on leachy, sandy knolls?

Frequently such knolls are very sour because the leaching off of the water has taken with it available lime. Analyses of the waters by the state shows that the water in the valleys is very much harder than that on the knolls, indicating that the former received much lime from the latter. Therefore it may be advisable to apply lime on such land.

What effect has lime on a cold, clay subsoil?

The only effect that lime would have on the subsoil might be that the carbonate water passing down would liberate some locked-up mineral plant food which, through the rise of water, would make the soil more valuable for growing crops.

Is it best to put lime on ground before plowing?

It is rarely wise to plow under lime. Its tendency is always downward. It is much better to apply it on the surface and thoroughly mix it with the soil. Instances have been known where heavy dressings of lime were plowed under and later in the bottom of the furrow calcium was found not dissimilar to the plaster on walls.

Can lime be profitably used as a top dressing?

Very good results are often obtained from a top dressing of lime, but it is far better to apply it before seeding so that it can be thoroughly incorporated with the soil.

How much burned lime should be applied per acre where none has been used for 30 years?

Probably one-half ton per acre would give good results. If the land is heavy and contains a good deal of vegetable matter, this might be increased to 1,500 pounds to advantage.

What is the danger in the use of lime?

There is practically no danger in using liberal amounts of the carbonate of lime. Where the caustic form is used there may be danger of too rapidly reducing the vegetable matter in the soil, and on the lighter soils making them too compact.

Is it wise to use lime on land the same season manure or other fertilizer is used?

There is no objection to using lime in combination with manure if the two are immediately mixed with the soil, even though they are applied within a short time of each other.

Is it advisable to use lump or hydrated lime in the stable as an absorbent?
What will be the effect if used?

Lump lime should never be used in the stable, because coming in contact with the liquid it would slake and also free the ammonia. This would also be true of the hydrated. Its only beneficial effect would be as a purifier and, obtained at the cost of the loss of the most valuable part of the manure, would be an extravagant way of purifying, when a can of disinfectant, which will last several months, can be purchased for \$1.50.

Which form of lime can be mixed with manure and not drive off the ammonia?

The only form of lime which can be used in this way is the carbonate or ground limestone. There is no particular object in so mixing it. It is very much better to add to the manure the treated South Carolina rock, which tends to fix the ammonia and also adds needed plant food, or the untreated rock can be added, which, while it has no more property than the lime for fixing ammonia, does not liberate it and adds phosphorus in a form which the decay of manure makes available.

Will raw, ground limestone liberate nitrogen if used as an absorbent in the stable?

It will neither liberate the nitrogen nor help retain the ammonia. Its only value in the stable is as an absorbent, and road dust and several other dry materials are very much more valuable for this purpose.

On clay soil is it better to sow lime broadcast or use a drill?

So far as the effect of the lime is concerned, it makes no difference. It is a very unpleasant job to spread it broadcast, and if a machine is available it will do very much better work. The ordinary grain drill does not sow over 500 pounds per acre, which is not enough for best results. When a half ton can be applied, the drill is to be recommended.

How will it do to apply lime with a manure spreader?

Lime containing too many hard particles to put out with a drill or other mechanical device, can be applied with a manure spreader. If a spreader has a slow feed and is equipped with lime hood to prevent the lime being blown away, it will put it out in very good shape. When the wind blows the adjoining fields will receive more of the lime than the one where the spreader is. It is difficult to adjust the proper amount per acre, although a little study in how high to put it on the sides of the spreader will determine this. One serious defect is that it is death to the spreader. The dry particles of lime coming in contact with the castings soon wear them out. Our own experience has led us to abandon the spreader, and, using at least a carload of lime

each year, we have found it more economical to purchase a broadcast distributor, which can also be used for the broadcast of fertilizers.

Is there a better time and crop on which to apply lime than on oats at seeding time? Is it better to apply it eight or ten days before seeding?

The time and manner of applying lime is largely one of personal convenience. It should always be applied and mixed with the soil after the ground is plowed, and, as its action is somewhat slow, the sooner it can be applied after the soil is broken the better. Applying with oats at seeding is a very good way, and if there can be an interval of eight or ten days, it is preferable; nevertheless, there will be no injury if the application is made just before seeding. Many apply it after breaking the soil for corn, thus giving it a longer time to act before seeding, and when this is convenient it is preferred.

For what crop is lime most useful? How is it with regard to oats?

Lime shows most marked results on clovers, although it has effect, but not so noticeable, on other grains and the cereals. The tendency would be to increase the weight of the oats, but probably not enough to pay for the application to them alone. Because of its benefit to the clover that will follow and the mechanical effect on the soil, it might be wise to apply it with this crop.

Will lime sown in the spring injure wheat?

There would be no injury with a moderate amount of lime sown on wheat in the spring, and it might be of material benefit to both the grain and grass that follow.

Is it profitable to use lime for a grain crop when not wishing to sow grass seed, and is it profitable to use on corn ground?

It is doubtful if enough benefit would be derived from the use of lime on the grain crop to make it pay where one does not intend to sow grass seed, but we can conceive of no successful line of general farming that does not include grass in the rotation. Lime does often give marked results on corn. Mr. James Findlay, of Salisbury Mills, Orange County, has in two successive experiments increased the yield of corn by its use from 20 to 25 per cent.

Is burned lime better than ground lime rock to use in starting alfalfa, and how much would be required per acre?

The relative values of these two kinds of lime are answered in detail at the beginning of this section on lime. There are some indications that the carbonate or ground rock is preferable. It would not be advisable, however, to pay any more for it on this account and, in order to obtain the same amount of actual lime, would necessitate using very much larger quantities. Not less than one ton of the burned lime and two tons of the carbonate are recommended for alfalfa.

Should phosphate be used with lime in seeding alfalfa; if so, what analysis?

Lime only furnishes one form of plant food for the alfalfa in addition to sweetening the soil and making it a more congenial home for the bacteria. Both phosphate and potash are needed. Five hundred pounds per acre of an analysis 10 and 5 is to be recommended. It is better to apply the lime some time previous to the application of the fertilizer.

Will lime after clover kill sorrel?

Lime will never kill sorrel, and, while this plant grows luxuriantly on sour soils because higher classes of plants will not grow, an application of lime, rendering the soil sweet, will not in any way prevent the growth of the sorrel, but it will put the soil in such condition that clover can occupy it, and after it is broken and sown with the latter, the sorrel will usually disappear.

Should lime be used on a crop of potatoes?

It is not advisable to use lime on potatoes:

1. Because they do well on an acid soil and need very little lime in their composition.

2. Because the lime making the soil sweet makes conditions favorable for the development of potato scab. Where land needs lime for other purposes it is better to apply it immediately after the potato crop or several years before.

Does land need lime for the bean crop?

Possible, though beans do not respond to lime as do clover and alfalfa.

Would you advise sowing agricultural lime on an old apple orchard that had been manured successively for a number of years?

The term "agricultural lime" really means nothing. Any form of lime used on the land is agricultural. There are some cases on record where the application of any form of lime has shown beneficial effect on the orchard by increasing the vigor of the trees. This is doubtless due to its more rapidly reducing the vegetable matter which has been applied in the form of a cover crop. In many cases no benefit can be seen on the apple trees from an application of lime. A wise plan is to apply lime about a limited number of trees and be guided by its action there.

Would you advise using land plaster and lime for fertilizer? If so, how much should be sown to the acre?

This will depend entirely upon what the needs of our soils are. Land plaster was formerly used extensively in New York State, but of late years we have largely neglected its use. The general explanation of its value has been that it set free certain potash compounds and thus was indirectly a source of potash, although it contains none itself. It is less beneficial than in the past. The use of lime depends entirely upon our soil requirements, although it should be said that as this material is studied it becomes increasingly evident that a large percentage of New York State soils are benefited by the application of lime. Every man ought to try to settle this problem for his own farm.

MANURES

*"The ground one year at rest, forget not then
With richest dung to hearten it again."*

MAY

When is the best time to apply stable manure?

The best time to apply stable manure is the day it is made.

Should we reckon on the value of a ton of manure to be the same on all soils?

The value of manure is especially marked when used upon light soils and those deficient in vegetable matter. For example, a ton of manure used upon high, dry uplands will have a more marked effect than when used on lowlands where humus is abundant.

Which is considered better, to plow manure under or work it in on plowed ground?

Either way will give good results and the question of method is not a vital one. Usually more marked results will be noted the first season where manure is applied on the surface of plowed land, and thoroughly harrowed in and mixed with the soil when preparing the seed bed.

In spreading manure during the winter on a field that slopes, do we not lose a large portion of its value by the washing of spring rains?

There will always be a risk of losing some fertility by heavy rains falling on manure spread on the surface, but there is no practical method known of handling large amounts of manure without some loss, and it has come to be the firm belief of those who have had most experience, that the daily drawing of manure is the best solution of this somewhat vexing problem of the farm.

Is it better to plow the manure under for grain, or to apply after plowing?

Manure spread on the surface after plowing and harrowed in and mixed with the soil during the preparation of the seed bed, will ordinarily give more marked results with grain than if plowed under.

What is the best time of the year to top dress with stable manure old meadows that cannot be plowed?

If we are to select a time to top dress meadows or pastures with manure, there is probably no better season than from mid-

summer to late fall. This enables the plant to appropriate the fertility before there is any danger of its being lost by melting snows or drenching rains, and in addition provides some mulch for winter protection.

Would it be well to spread stable manure on fall plowing, then apply lime broadcast upon the manure and immediately harrow the ground?

There is no reason why this method is not entirely sound and practical.

Where shall we spread our stable manure to best advantage, on sod to plow under or for top dressing on grass land?

There is a growing belief among those who have had the widest experience in the use of farm manures that there is no place where they give as marked results as when used as a top dressing on grass lands. The wisest place to use them is on new seeding to encourage the growth of the clover.

Is there danger of loss in spreading manure on frozen ground if on a sidehill?

There is undoubtedly danger that when manure is spread upon hill slopes there will be some loss by leaching, especially if the snow is thawing rapidly so that much water is running over the surface of the ground. At the same time, it seems to be unquestioned that the loss through a period of years will be less in this manner than in the usual way of piling and handling manure.



Farm Manure not only Furnishes Plant Food, but Helps to Keep up the Supply of Humus in the Soil

Would we lose by spreading manure in snow?

Manure loses in three ways: First, by loss of liquid; second, by fermentation; third, by the rain washing out mineral matter. Therefore the loss is much less when the manure is spread out than when placed on the ordinary pile. The labor saved is also worth considering.

There is always danger that some fertility will be lost when manure is spread upon the snow; but this loss is less than ordinarily supposed, and less than with any other practical method of handling. There is absolutely no loss from fermentation, but there may be some from leaching by running or melting snow.

Is there any danger of losing nitrogen in manure by plowing under a very heavy coat?

There is little or no danger of losing nitrogen from manure when plowed under. In a manure heap nitrogen may be lost in the gases of fermentation, but when thinly spread or plowed under, nitrogen can be lost only through leaching.

How should poultry manure be taken care of?

Poultry manure is best preserved by mixing with some material, such as acid phosphate, land plaster or road dust, and kept in barrels. It must not be mixed with lime, as this will cause serious loss of manure, and should be applied as promptly as possible to the land, because poultry manure is less stable in its nature and is apt to lose nitrogen if kept in large bulk.

Is sawdust of any benefit to the land when used as bedding, if well mixed with manure?

The actual manureal value of sawdust is exceedingly small, and it is generally believed that excessive quantities of soft wood sawdust may be injurious to the land, as it forms poisonous compounds in rotting. However, there can be no objection whatever to using such amounts of sawdust as may be necessary for an absorbent.

Which is the more practical method of handling manure, to draw it out with a spreader as fast as made, or to make a flat pile in the barnyard with a foundation of two or three feet of straw, the horse and cow manure spread evenly over the top each day and kept level?

When we remember that the average New York acre receives from 3,600 to 4,000 tons of rainfall in a year, we shall hesitate before advising any system of piling manure outside as a means

of saving it. The daily drawing of manure is sound, although frequently there may be times when the spreader cannot be used, and when we can utilize the tight wagon box and spread by hand.

Is it best to draw manure out in a pile and let it remain there six months or more before using it? Does it make it better the longer it remains there?

The rotting of manure is always attended with a loss of fertility. A load of well-rotted manure is worth more than a load of fresh manure, but there will be fewer loads than before it rotted. The consensus of opinion of men who have tried it on dairy farms is that the ideal way to handle manure is to draw it daily from water-tight gutters to the field.

Would manure be as good to put on land after being kept in a cement covered cistern for a year as it would if hauled direct from the stable?

It would be entirely possible to keep manure in a cement cistern for a year without serious loss of fertility. Furthermore, at the end of that time it would be in a very available form and all weed seeds would be killed. At the same time, the labor cost of doing anything of this kind is practically prohibitive and the steady drift of farm practice everywhere is to draw manure directly from the stable to the fields.

On a field with a gravel subsoil, is loss by leaching of enough account to deter spreading manure until spring?

The universal testimony of both experiment station workers and practical farmers is that the wise time to apply manure is directly to the fields from the stable, whenever a supply is ready to be drawn. It is possible that there is a loss of fertility under these conditions, but it is practically impossible to store manure without risk of loss.

Can a manure cellar be built to retain the value of the manure?

A manure cellar, as is the New England practice, can be built to hold all the manure of the farm and to keep it with very slight loss. The objections are the expense of the double handling, also that many people regard it as an unsanitary method. It certainly breeds flies in numbers which makes it objectionable in these days when we are waging a campaign against the fly.

In applying barnyard manure to hilly ground which is the more beneficial, to use it as a top dressing or to plow it under?

It is perhaps not so important whether we plow it under or put it on the surface so long as we convey it to the land without loss of fertilizing constituents. There is surely no better way to use manure than as a top dressing to grass, and especially on heavy soil, manure gives more prompt returns when used on the surface than when plowed under.

Does it give better results to top dress meadows than to plow the manure under?

The practice of using the manure of the farm as a top dressing for meadows is one which is rapidly gaining ground and favor in New York State. There is every reason to believe it a sound method of using the manure.

If a farmer had his farm only partly paid for and had the old system of cleaning stables, throwing manure out of windows under the eaves of the barn, would you advise his borrowing money to make alterations, so as to be able to draw the manure out each day?

It is easy to demonstrate that saving manure by a system which shall be both economical and efficient will pay each year a very large percentage upon the investment required. This does not mean, however, that our stables must be finished in white glazed tile or other beautiful but expensive ornamentations. Only a wealthy man can afford to waste manure. Often a willing hand and a wagon or sleigh and team is all the expense necessary.

Which is the more valuable for fertilizer, horse or cow manure, the same amount and kind of hay and grain being fed to each?

If the same amount of hay and grain were fed to a milk cow and to a horse, the manure resulting from the horse would be slightly more valuable, because the cow would take from the food certain elements to make the milk, which would not be utilized by the horse. The manure of a dry cow and of a horse would, theoretically at least, be of about equivalent value.

Is manure from cows fed on ensilage as good as from cows fed on hay and grain?

Ensilage, while rich in sugar and fat, contains relatively less amounts of potash, phosphorus and nitrogen, therefore manure made from cows fed largely on ensilage is less valuable than from those which are receiving a large amount of nitrogenous

grains. Of course, this is in no way an argument against the use of silage, but only the recognition of the fact that the value of the manure of an animal depends largely upon the character of the food consumed.

Would it pay to buy potash to mix with manure?

This would depend entirely upon the question of whether or not the soil needed potash. There are some soils where this practice might be advisable; however, very many New York State soils are already so well supplied with potash that further applications seem to give no very decided results. If the liquid is saved manure furnishes a goodly amount of potash.

What is your opinion as to the advisability of using floats as an absorbent in the stable?

The amount of liquid which will be absorbed by floats is exceedingly small, but they have some value as a deodorizer. Ammonia is not given off by manure in any appreciable quantities where it is drawn every day. Fresh manure has no ammonia, but that volatile gas is formed whenever manure heats or ferments in bulk. The floats would add phosphoric acid.

How much can one afford to pay for straw to be worked into manure?

The value of the fertility contained in a ton of oat straw at usual fertilizer prices is between three and four dollars. In addition to this, the humus content is of considerable value, but no one has attempted to estimate this in dollars and cents. The man who wants fertility quickly and in available form cannot afford to buy straw and wait for it to become available; but the man who wishes to gradually build up his soil, and at the same time take care of its humus content, may find cheap roughage of this kind a good investment.

Which is cheaper for bedding, baled straw at \$6 per ton or shavings at 25 cents per bale?

The value of baled shavings for manure is exceedingly small. Indeed, it is a question if too much shavings from soft wood may not be actually injurious to the land. On the other hand, where straw, especially oat straw, can be purchased for \$6 per ton, the fertility which it contains should go a long way toward the cost of the straw.

Would it be well to mix hen manure with barnyard manure in compost heaps?

Yes; there can be no objection to doing this.

Will hen manure lose its fertility by being spread on the ground in winter?

No, except that some fertility may be washed away by heavy rains or melting snows.

Would it pay a farmer to draw manure from the city when he can buy commercial fertilizers near his farm?

The buying of manure by the ton is almost always more expensive than the wise buying of commercial fertilizers. Without doubt, when the farming is such that green crops can be grown, one will obtain more plant food for less money by buying chemicals than manure, particularly if it has to be hauled any distance. The green crops will supply the humus.

Would it pay a farmer to pay \$4.60 per ton for horse manure delivered within one-half mile of his farm by railroad, or would it be better to buy phosphate at \$27 per ton?

Owing to the large amount of water which all manures contain, it would seem that this price is more than one could possibly afford to pay. It should be added that where manure is shipped from the city to the country, it is the custom to turn the hose upon the carloads of manure in order that destructive fermentation shall not run too high.

What is the most practical way of distributing manure on land?

Where fields are not too steep, the ground bare of snow, and the manure does not contain too much liquid, the manure spreader is far ahead of any other method. The dairy farmer, however, who draws his manure from water-tight gutters every day in the year will frequently find that the manure spreader is not practical. Under these conditions the best thing to use is a galvanized iron wagon box which is water-tight and light.

Are manure spreaders practical?

Manure spreaders are ideal implements for spreading manure where lands are not too hilly and where the snow is not deep. Unfortunately, owing to the fact that on the dairy farm manure from water-tight gutters contains a great deal of free liquid and the added fact that it ought to be drawn regardless of weather conditions, the manure spreader has not the universal application which it otherwise would have.

Does it pay to buy a manure spreader where manure is taken to the fields every day?

It will probably pay to buy a manure spreader even when manure is drawn every day, if the farm is not too hilly and snows too deep; and especially if there are absorbents enough available so that the liquid portions will be taken care of. Semi-liquid manure does not work nicely in a slat bottom spreader.

Does a manure spreader pay if a farmer cannot use it in the winter and has to draw manure every day?

It will depend on how much manure he has to handle during the summer season and what its character is. Where water-tight gutters are used there is apt to be so much free liquid in the manure that it is not practical to use it in the slat bottom spreader.

What is the relative value of manure spread on the land by hand and with a manure spreader?

The manure spread by the spreader is of more immediate value than that spread by hand because it is more widely and evenly distributed; hence more readily available for the needs of the plant. Doubtless, eight loads spread with a spreader will give as good results as ten spread by hand.

Explain the necessity of manure for utilizing the potash and phosphorus native to the soil?

The question of soil fertility is always a twofold matter. First, there is the question of actual plant food, such as nitrogen, potash and phosphorus, which materials we have long been accustomed to dealing with and to buying in a bag. Then, there is the further question of humus or decaying vegetable matter in the soil which unlocks mineral plant food, and this is something which cannot readily be studied by the chemist, and cannot easily be stated in terms of dollars and cents. Both sides of this question must be considered together without neglecting either. Farm manure not only furnishes plant food, but in addition helps to keep up the supply of humus in the soil, and introduces into it bacteria which seems to play an important part in plant growth. There is no more serious mistake in our efforts at soil improvement than to think that nitrogen, potash and phosphorus express the whole of soil fertility. The question of humus is surely not less important, and yet it is one too frequently lost sight of by the fertilizer farmers.

COVER CROPS

"A permanently successful agriculture in our country must be based upon the use of legumes."

ALVA AGEE

Is it best to keep a growing crop on our cornfields during the winter?

There is no agricultural practice more ideal than that our fields should always be kept covered with a growing crop summer or winter. At the same time, it must be said that our climatic limitations are such that the cover crop has by no means the wide application in New York that it has in the states south of us.

At what time of the year would you advise plowing under green crops? Is there any danger of souring the land?

They should be plowed under early enough so that they would not rob the soil of water needed for the following crop, and while they are still soft enough that they will decay in the soil rather quickly. The question of souring the soil is probably theoretical rather than practical.

At what stage of growth should rye or buckwheat be plowed under to be most beneficial to the soil?

Rye should be plowed under before it is headed out, because after that time it decays very slowly in the soil and may do actual damage rather than be of advantage to the following crop. Buckwheat is a much softer and more easily broken down plant and may be allowed to practically reach maturity before plowing under, providing the season will allow.

What per cent. of the fertility value of a green plant do we lose by not plowing it under until it is dead and dried?

So far as the fertility is concerned, it makes very little difference whether a crop is plowed under at maturity or left to decay on the soil. There is no serious loss in either case.

Will the non-legumes cause less acidity than the legumes when used as green manure?

There is nothing to show that the legumes have any special action in increasing soil acidity. It is generally stated, however, that the plowing under of green crops has an effect of this kind, which is not the case when they are dead and dried.

When should clover be sown and how soon after plowed under when used as a fertilizer? Is it advisable to sow it with oats for this purpose?

Clover may be sown on winter grain in very early spring, depending upon the chances of getting it covered by the freezing of the ground and the washing of the early spring rains. It is better, however, to defer sowing until the ground can be lightly worked with a harrow, which will work the clover seed into the ground and secure better germination without injury to the wheat or rye.

Clover may be sown with oats by running it between the hose so that it will not be covered too deeply; or it may afterward be covered by a Breeds weeder. Clover sown with oats rarely makes a growth the first season large enough to be of sufficient value as a cover crop, and on the farm where animals are kept it is always wise to harvest the clover crop and feed to the animals, afterward taking the manure back to the land.

Would you advise plowing clover under green or letting it mature before plowing under?

Under ordinary conditions clover should be harvested and fed to the animals and the resulting manure taken back to the fields. Where no stock is kept, it may be advisable to plow it under. There is no doubt about the resulting benefit to the land, but the plowing under of green crops is a wasteful operation from the standpoint of animal husbandry. More plant life will be secured if the clover can be allowed to mature before plowing under, although it may be necessary to have the land earlier for some succeeding crop.

Which is the better time to plow under clover, when it is in blossom or after? Also, what is the best time to turn under buckwheat?

The time of plowing under a green cover crop must depend upon circumstances. It is, of course, desirable to secure just as much growth as possible and to give the plant opportunity, if a legume, to gather all the nitrogen possible. On the other hand, a cover crop allowed to stand too late may frequently consume water which will be needed badly by the crop following it. Also, the turning down of a heavy growth of material may form such a layer as to prevent the use of water from the subsoil, and thus greatly intensify the effects of drought. If we could know what weather was to follow, we could tell better as to the time of turning under green crops.

How much benefit does a farmer get from clover as a fertilizer when he cuts two crops of hay after the clover runs out?

We should remember that red clover is a biennial or two-year plant, and we have no right to expect more than one crop from it. At the same time, during its short life it not only gathers nitrogen from the air, but brings up fertility from low depths and builds up a great root system; when these thick, fleshy roots decay they add humus to the soil. Undoubtedly, the two years following will give better crops of timothy hay than if the clover had not been sown with the timothy.

Is there as much fertilizer value in alsike as in the larger varieties of clover?

Ton for ton, alsike clover is worth a little more than red clover for fertility. However, the amount which can be grown per acre is less, and its root system is not as deep as that of red clover; therefore the latter is probably to be recommended as a fertilizing crop.

What is the value of sweet clover as a soil renovator and improver?

Sweet clover has never been widely popular as a cover crop. First, because it is rather uncertain and capricious in its growth and needs some time to thoroughly establish itself. There are other legumes to which these objections do not apply.

Does sweet clover enrich the soil?

Sweet clover is a valuable plant for soil enrichment as it has a strong, deep root system and apparently gathers nitrogen by means of the nodules on its roots as freely as any of our leguminous plants. In fact its root nodules are as conspicuous as in any plant.



Yellow and White Blossoming Sweet Clover

What is the nature of hairy vetch, and to what is it best adapted?

A leguminous crop, and valuable for a cover crop in orchards and corn.

Can vetch be raised for plowing under profitably for a small farmer as far north as Madison and Chenango counties?

Vetch adapts itself to a wide range of country. It does best on light soils, and there is no reason why it should not do well



Mammoth Yellow Soy Beans

on such in both of these counties. It is an exceedingly valuable nitrogen-gathering plant, living over winter. Although it is rather slow to start in the spring, it makes a large growth, and because of the hairs on the leaves, it does not transpire or evaporate from the soil as large an amount of water as do the smooth-leaved plants, like the clovers and cereals. The seed is very high-priced, and very often it will not grow readily without inoculation; for this reason its use in a wholesale way, where it has not been previously grown, is not recommended. A wise plan is to sow a small amount. If it does not make a satisfactory growth the first year, sow the same land again, and inoculation of the soil will usually be obtained. This plot can then be

used to inoculate larger areas. Many have recommended using rye with it. Our experience does not justify this, since the rye grows so rapidly in the spring that it overshadows the vetch and must be plowed under before the vetch has attained the size that it should. A better plan is to sow with it about a bushel of oats to the acre. This will protect the vetch in the fall and afford a good deal of vegetable matter and, dying after the first heavy frost, will allow the vetch to occupy the ground in the spring.

What is the proper quantity of vetch seed to sow per acre?

Usually one-half bushel per acre. It is unfortunate that the seed is quite expensive.

Where can vetch seed be purchased, and is it a profitable crop to raise for bringing up old sandy soils?

Vetch seed may be bought at any large seed store. It is a profitable crop for the purposes named and is an excellent cover crop for the orchard. The seed may be mixed with barley, clover or cow-horn turnips.

Does vetch make good hay when cut early? What kind is best for a cover crop?

This plant is not often used for hay, but no doubt would make rich food. It is used generally as a cover crop for orchards, and the winter or hairy is the best.

What is the value of vetch as compared with crimson clover?

Crimson clover cannot be depended upon in New York State on account of our climatic conditions. It seems to have been a failure everywhere outside of a few localities in the Hudson River Valley. On the other hand, hairy vetch is entirely hardy in severe climates, and hence is much more feasible in New York State.

Will it pay to sow cow-horn turnips as a fertilizer?

It is doubtful if cow-horn turnips are as feasible for a green manure crop as are rye, rape or buckwheat; yet they grow readily, feed deep and use, as does the rape, mineral elements in the soil not obtainable by a higher order of plants.

Are cow peas successfully grown in New York State? If so, which would you recommend, cow peas or soy beans?

The cow pea, so called, is really a very tender bean and has no place in New York State agriculture unless it be on Long Island or in the lower Hudson Valley.

The soy bean is being grown quite successfully in combination with silage corn in a few localities of the state, although it would probably grow much better if we had a warmer climate.

What is the value of rye compared with clover, plowed under as a green crop?

Clover has the faculty of obtaining nitrogen from the air, and by the aid of the bacteria on its roots adds available nitro-

gen to the soil; rye has no such property. The rye, however, will grow on land where clover will not thrive and will make a greater quantity of vegetable matter in a given time and much better cover than the clover, and for this purpose is particularly valuable. Care should be exercised that it is not allowed to grow too high in the spring, since its growth will pump too much water from the soil, and the large amount of green matter plowed under will prevent the rise of water from the subsoil and cause an excess of fermentation. One must sacrifice somewhat of growth to prevent this injury.

What do you think of rape as a cover crop?

It is very good but not as good as vetch or clover which are nitrogen gatherers. Like the turnip, it has the ability to use mineral plant food in a form not usable by the higher grade of plants.

How can a cover crop be grown after cabbage? Also would you sow rye in the mixture for the cornfield?

It is pretty difficult to grow a cover crop with anything but a crop of early cabbage as, after the late cabbage is removed, growth is exceedingly slow. One would not get growth enough, even with rye, to make much of a cover during the winter. It could be sown very late (just before the ground freezes) so it would not come up until the next spring and before the planting of some late crop. A very satisfactory growth might be obtained, but would seldom be advisable. Rye is excellent to sow in the cornfield because it germinates very rapidly and will make a very satisfactory growth. Put in a mixture with other plants, such as rape or clover, it tends to outgrow and overshadow them and needs to be plowed in the spring before the other crops that live over winter make as much growth as is desirable. When sown in a mixture with rape or turnip it is all right.

COMMERCIAL FERTILIZERS

*"There are who, fondly studious of increase,
Rich foreign mould in their ill-natured land induce."*

JOHN PHILIPS

Is the use of commercial fertilizer profitable as a rule?

There is no doubt that the wiser and more skillful farmers we become, the more extensively we shall learn to use our commercial manures. At the same time, the man who uses them and forgets the importance of vegetable matter, neglecting to carefully save and apply the droppings of the farm animals, is working for success along wrong lines.

Is it more economical to use high-grade fertilizers?

It is almost always possible to purchase more plant food for one dollar in the form of high-grade fertilizers, than of low-grade, cheap goods.

Is there such a thing as a complete fertilizer without a filler?

There is no possible reason why a fertilizer should carry any filler, if by "filler" is meant some makeweight substance of low value. Our high-grade fertilizers contain practically nothing of this character, and even in the case of cheap, low-grade goods the so-called filler is an effort to use low-grade material rather than a deliberate attempt to make weight with worthless substances.

Is there any difference in the value of commercial fertilizers having the same analysis of available matter, if composed of different elements?

The term availability as applied to fertilizers is a relative term. Some materials, like nitrate of soda and muriate of potash, are ready almost immediately for the use of the plant. Others, like fish scrap, tankage, ground bone, or bone meal, become available only after certain chemical changes have taken place. In a general way, however, the analysis printed upon the bag of fertilizer may be taken as a fairly correct index of their relative values.

Which do you think is the more available to plants, fertilizer mixed by the farmer himself or the commercial fertilizer?

The question of whether a man ought to mix his own fertilizer or buy ready mixed, depends almost wholly upon the



A Practically Abandoned Farm Bought for \$7 per Acre

price at which he can secure it from his dealer. If a man understands his business; knows what he wants to buy and has the opportunity, he can mix fertilizers as thoroughly as is necessary, on the barn floor with a shovel, for 50 cents a ton. In the majority of cases he will save money by so doing; yet sometimes the dealer is able to sell mixed fertilizers at prices so low that there does not seem to be much warrant for trying to purchase the separate chemicals. The home mixer, however, has the additional advantage that, if he knows the ingredients his fields need, he may make his fertilizers to fit such conditions.

Will the use of commercial fertilizer benefit more than the first crop?

The effect of fertilizers upon subsequent crops will vary somewhat with the character of the fertilizer and the amount applied. Some fertilizers, such as coarse-ground tankage or bone meal, may become so slowly available as to give results with later crops rather than with the first.

Is animal fertilizer better than rock fertilizer?

The value of phosphorus depends not upon the source from whence it was derived, but upon its relative solubility and availability to the plant. So it is not a question as to whether a fertilizer is derived from bone or from rock; its value depends upon the percentage of soluble matter in the total. As a matter of fact, the amount of phosphorus derived to-day from bone is relatively very small, and the claims of superiority made for bone fertilizers is largely a talking point of salesmen.

Is a mixture of nitrate of soda, acid phosphate and potash dry enough to drill without a filler?

There is little trouble about the dryness of this mixture. It should be mixed, however, just before using as it tends somewhat to cake if it stands a long time.

Is phosphate useful after it becomes hard and lumpy?

The mere fact that phosphate has become hard and lumpy does not indicate any decrease whatever in its value. However, it should be made fine before applying to the land.



Unimproved Field on Run-down Farm — Nothing but Weeds and Brush

Should fertilizers be used on fall crops?

Fertilizers are surely just as useful and as much called for on fall crops as on any other. The only qualification is that

nitrate of soda applied in liberal amounts in the fall may be lost in the winter and spring rains.

Would it pay to use fertilizers on corn ground on which there has been a liberal application of stable manure?

As a rule it would not pay to apply nitrogen where there has already been a good application of farm manure; but, on the other hand, applications of phosphorus frequently pay well when used in conjunction with farm manures. On heavy soils, a light application of nitrate of soda will pay to start the corn before the nitrogen in the manure is available.

For corn and potatoes would you put the fertilizer in the hills or put it on broadcast?

The constantly growing opinion of those who have had the most experience is that for all cultivated crops, the fertilizers had best be applied broadcast rather than directly beneath or around the plant, except when used in very small quantities.

Which is the better source of phosphoric acid, basic slag or South Carolina rock?

At present dissolved rock is our cheapest source of phosphoric acid, and while excellent results have been reported in many



Adjoining Field Raised to Present Condition by Tillage, Lime and High-grade Fertilizer (No Manure). Second-year Timothy — three Tons to the Acre

cases from the use of basic slag, we have no very satisfactory data as to the availability of phosphorus in this form. Prob-

ably it is well to stick to the acid rock in the present state of our knowledge.

What effect on the soil has South Carolina rock treated with sulphuric acid?

The use of dissolved rock has the effect of increasing soil acidity at least a slight degree. At the same time, its influence in the quantities ordinarily used is so small that it does not seem anything we need worry about in our generation.

Will the raw, finely ground phosphorus rock placed in the soil with humus and manures become available as quickly as the acid-treated rock?

There is no doubt that finely-ground untreated phosphate rock will become slowly available in the soil, but there is no reason to believe that it will be as prompt in its action as will the rock which has been treated with sulphuric acid. The question of which form to use, then, largely turns upon the question of whether or not we can afford to wait for our supply of phosphorus. The man who can best use the untreated rock is the farmer whose soil is filled with vegetable matter, and whose plans look forward to long years of farming on the same land.

Is treated rock better than the raw for absorbing the drops in the stable?

If there is any free ammonia, treated rock has a value for absorbing it not possessed by the raw rock. Aside from this, however, there is no especial difference except that the untreated contains more phosphorus, but in an insoluble form. The manure will tend to make it soluble.

Is phosphate rock or floats of any value?

"Floats" is the trade name applied to very finely ground phosphate rock to distinguish it from the rock which has been ground and then treated with sulphuric acid. The value of floats is somewhat problematical. In the western states excellent results have been obtained from its use, and the farmers there have been widely advised to use it in preference to the treated rock. In the East it has seemed to be rather inert in the soil and to have failed to give up its phosphorus for the growth of the plant. It should be said, however, that three pounds of phosphorus in the form of untreated rock can be bought for the same money as can one pound in the treated rock.

The man who must be sure of having phosphorus promptly had best confine himself to the form in which he knows the phosphorus is available.

What value as fertilizer has bone after it comes from the sugar refineries?

Bone is used in the sugar refineries in the form of bone charcoal to take out the coloring matter from the raw sugar syrup. After use, this material is sold under the name of bone-black and carries about 28 per cent. of phosphoric acid, but no potash.

How should acid phosphate be applied with manure, and would it be well to use it in the stable?

There is no reason why acid phosphate should not be used directly in the stable, sprinkling it in the gutter on the manure. It would have a very slight absorbent value for the liquid, would act as a deodorizer and, in addition, would help to fix the ammonia.

Would nitrate of soda, applied in the spring, be retained in the soil until the following year, if not taken up by plant growth?

Nitrate of soda is one of the few elements of fertility which is washed out of the soil in the drainage water, and as a rule should not be applied in greater quantities than will be sufficient for the growth of the crop that year.

What can the farmer afford to pay for basic slag?

A safe rule in the purchase of fertilizers containing phosphorus is that the farmer can afford to pay about one dollar per ton for each percentage of available phosphorus which it contains. However, there is considerable difference of opinion among chemists as to the availability of the phosphorus in basic slag.

To what extent are bone meal, Thomas slag and superphosphates used unmixed as a fertilizer?

The more the soil fertility question is studied in New York State, the more evident it becomes that an element of fertility which is most frequently lacking is phosphorus; consequently

the use of acid rock, Thomas slag and other forms of phosphorus unmixed with nitrogen or potash, is a rapidly growing practice.

In what way would fertilizer be of the most benefit on worn land, applied before or after plowing?

The correct principle in applying fertilizer of any kind is that it should be thoroughly incorporated with the soil, and applied deep enough that water may be present to dissolve it. This condition will not be reached by spreading upon the surface, and the ideal method is to apply the fertilizer at the time of planting the crop and to harrow and mix it thoroughly with the soil.

What is land plaster? In what ways can it best be used on most farms?

Land plaster is ground gypsum rock, being a combination of sulphuric acid and lime. It will not sweeten soils, and must not be expected to do the same work that is performed by quicklime, ground limestone or air-slaked lime.

Of what use is plaster for growing crops?

It is hard to account for the value of land plaster in growing crops; it is not regarded as a direct source of plant food. The facts are that it was once widely used in our agriculture, but at present we hear very little of it. Many theories have been offered to account for its value; the most common of which is that it has the effect of liberating certain potash compounds (seldom found at the present time) in the soil, and is thus indirectly a source of potash. It certainly seems as if its effects are less marked than they were many years ago.

Do you consider plaster with fertilizer of any value to potatoes?

No, except to make the fertilizer more easily distributed where much nitrate of soda or rich potash compounds are used.

What is the difference in plant food between sulphate of potash and muriate of potash?

Sulphate of potash is potash in combination with sulphuric acid. Muriate of potash is potash in combination with a substance called chlorine. Both materials contain almost exactly the same amount of actual potash per ton, that is to say, about 50 per cent. The sulphate, however, always sells

for a little the higher price, because it is believed that there are a few crops — notably hops and tobacco — on the quality of which, the use of the muriate exerts an unfavorable effect. We hear less of this than we did a few years ago, and it may safely be said that for all ordinary farm crops we should buy muriate of potash, because more potash may be purchased for a dollar in that form than in any other.

What is the value of kainite as compared with other commercial fertilizers, and how should it be applied?

Kainite is the name given to a material imported from the potash mines of Germany. It contains about one-quarter of its weight of muriate of potash, the other three-quarters being made up of sulphate of magnesia, common salt and other materials believed to have no particular value for plant growth. It will be wiser generally to buy muriate of potash, if potash is desired. If kainite is used it must be remembered that it will take 400 pounds of it to do the work that 100 pounds of muriate of potash would accomplish.

What is acid rock and what action does it have upon the soil and crop?

Acid rock is the trade name applied to natural lime phosphates found in South Carolina, Florida and Tennessee and some other states, which have been treated with sulphuric acid in order to make the phosphorus available. This constitutes to-day our cheapest and one of our best sources of soluble phosphorus.

What is the comparative value of wood ashes and cheap grade acid phosphate for rye? Would it pay to buy Canada hard-wood ashes at \$10 per ton?

The best grade of wood ashes are not worth more than \$10 per ton. Wood ashes furnish no nitrogen, very little phosphoric acid and commonly from 4 to 6 per cent. of potash and 30 per cent. of lime. Generally they sell for more than they are worth; that is to say, they are an expensive form of plant food. If we need potash we can usually buy it much cheaper in the form of muriate of potash than of ashes. Ashes, moreover, are exceedingly uncertain in their composition, and if purchased at all should be bought only upon the guaranteed analysis. Acid phosphate is especially useful in the growing of rye on most soils, and is to-day the standard form in which to purchase phosphoric acid in soluble form.

Would you mix wood ashes with stable manure or apply them separately?

Mixing ashes with manure is not sound practice if they are to be kept any time, because it leads to losses of ammonia. There would be no objection to mixing manure and ashes and applying immediately; this may be the easiest way if a manure spreader is available.

Do we lose much potash by sowing ashes on frozen ground?

Under ordinary conditions there will be no loss worth mentioning.

Are coal ashes of any value?

Coal ashes are of very little value for the plant food which they contain, but are frequently of mechanical value when used on heavy, retentive clay soils.

Is powdered carbonate magnesium of any worth as a fertilizer?

Magnesium is used in small amounts in the growth of all plants, but is believed to be present in all soils in sufficient amounts. Its use as a fertilizer is not advised.

Of what value per ton is the refuse from an acetylene gas plant in the wet or putty state?

The waste from an acetylene gas plant is principally hydrated lime in combination with a quantity of water. It has the value of course of lime, but it carries such an amount of water that its value per ton is small.

What is the value of muck as a fertilizer? Will it pay for the drawing?

Muck is a material, the composition of which is quite variable. Sometimes it contains considerable nitrogen in quite an unavailable form. It is valuable for the vegetable matter it contains and as an absorbent in stables. Although we could not afford to pay much money for it or draw it a great distance, it is frequently well worth handling if the supply is convenient.

What is the mineral value of one ton of cottonseed meal?

A ton of high-grade cottonseed meal should contain about 154 pounds of nitrogen, about 61 pounds of phosphoric acid and about 32 pounds of potash. If we allow a value of 15 cents a pound for the nitrogen and 4 cents for the phosphoric acid — which is as cheap as we could possibly expect to buy them — the value of this meal would be \$26.82.

What value has burnt grain as a fertilizer?

Grain which has been burned or charred will have the same amount of lime, potash and phosphorus in it as before. Some of the nitrogen will be lost, however, depending upon how badly it was burned. As a rough approximation, charred grain if dry, might be worth from five to eight dollars per ton for the fertility it contains.

Is fish used in fertilizer for the purpose of bring up the analysis or as a filler?

Dried fish or fish scrap is a very valuable and rightly valuable source of nitrogen and to a less extent of phosphorus. It is a widely used element of fertilizer in the East.

Are corncobs of any value as fertilizers?

The fertilizing value of corncobs is very small. Their composition is as follows: Water, 12.09 per cent.; ash, 0.82 per cent.; nitrogen, 0.50 per cent.; phosphoric acid, 0.06 per cent.; potash, 0.06 per cent.



FARM CROPS

Meadows

Wheat

Pastures

Buckwheat

Clover

Corn

Alfalfa

Soy beans

Oats

Potatoes

Rye

Beans

Cabbage

“The viewpoint, all the time, is that of the practical man who wants cash compensation for the intelligent care he gives the land. The farming that leads into debt, and not in the opposite direction, is poor farming, no matter how well the soil may prosper under such treatment. Experiment stations and practical farmers have developed a dependable science within recent years, and there is no jarring of observed facts when we get hold of the simple philosophy of it all.”

ALVA AGEE.



Beets Yielding over 300 Bushels per Acre



Over 60,000 Heads of Celery

MEADOWS

"Next in importance to the divine profusion of water, light and air, may be reckoned the universal beneficence of grass . . . Forests decay, harvests perish, flowers vanish, but grass is immortal. . . . It bears no blazonry of bloom to charm the senses with fragrance or splendor, but its homely lure is more enchanting than the lily or the rose. It yields no fruit in earth or air, yet should its harvests fail for a single year famine would depopulate the world."

INGALLS

Where a seeder is run at the rear end of a drill, would it be best to run over afterwards with a smoothing harrow?

Grass seed ought to be lightly covered instead of depending upon rain or frost or luck to cover it. It should, however, be covered very shallow; a plank drag or smoothing harrow or Breeds weeder being the best implement.



Which is better when seeding a meadow — to drag in manure or put it on top of the seeding?

If the manure is available at the time of seeding, it is better to mix it through the soil with a drag, where the plant roots will be, rather than put it on top.

What fertilizer is best to use when there is no manure?

One of the essentials of a good seeding is plenty of vegetable matter in the soil. Where there is no manure this can be supplied by turning under a crop of buckwheat or rye; then use a fertilizer containing about 4 per cent. of nitrogen, half of which is derived from nitrate and the other half from some organic source, such as tankage, fish scrap or finely ground bone, containing 10 to 12 per cent. of phosphoric acid and 5 per cent. of potash, using at least 500 pounds per acre.

Will it pay to use commercial fertilizer on a new-seeded meadow?

Most emphatically, yes, unless there has been an abundant amount of manure applied. Even then we have found the addition of the potash and phosphoric acid pay; in fact, it is doubtful if there is any place where commercial fertilizer will give better results than on meadows.

When is the best time to put hen manure on new seeding?

Material benefit will be obtained by applying hen manure at any time when it is available and is most convenient. If one has it, it is better to apply it when the seed is put in; then it is of benefit from the start, but applied in the spring it will always give good results.

Is it profitable to sow nitrate of soda on grass?

There is no fertilizer that will give as much growth for the money expended as nitrate of soda on grass land, but it is a one-sided fertilizer, inducing a very rank growth of grass lacking in nutrition and in weight. It is better to apply phosphoric acid and potash with the nitrate.

At what time would you apply nitrate of soda on new seeding?

The ideal time to apply nitrate of soda to meadows is in the spring about the time the first green is coming from the land. In other words, apply at the beginning of growth when there will be a living plant ready to receive it.

Is basic slag good to sow on a meadow?

Basic slag contains 17 or 18 per cent. of phosphoric acid in technically an unavailable form. The slag is exceedingly fine, and in a season of ordinary moisture a large part of this will be available; in a dry season, very little. It also contains 25 to 30 per cent. of lime, which in itself has a value. Experiments last year when there was a lack of rainfall showed very much better results when the same money value and percentage of phosphoric acid was applied in the form of South Carolina rock than with the slag. A year of abundant rainfall would probably be more favorable to the slag.

Are wood ashes good for meadows? If so, how and when should they be applied?

Wood ashes are good for meadows or any other crop, the principal requirements of which are potash and lime. They may be applied broadcast with a drill or lime sower.

How does bulk salt compare with slaked lime as a fertilizer for grass or crops?

Salt has practically no fertilizing properties, its value is largely mechanical. Slaked lime has a mechanical effect on the soil, liberates plant food and also makes it sweet.

Is plaster of any benefit when sowed on clover? If so, what time in the season should it be put on?

In late years plaster shows very little effect on clover. This is doubtless due to two reasons: First, because of lack of vegetable matter in the soil; second, because there is a form of potash which plaster liberates, but this is in very scanty supply and in the bulk of the long-tilled soils has been exhausted.

If a field has been in grass only two years, is it better to manure that or the corn direct?

More and more the best farmers are adopting the practice of applying the manure to the meadow a year previous to planting with corn. This gives almost certain and quick returns in the hay crop, increases the growth of sod to be turned under for the corn, and should there be mustard or other weed seeds in the manure, they will spring up and disappear on the meadow and give no trouble the following year in the corn. The heavy sod supplemented by a little fertilizer will give as good corn as where the manure is applied directly to the corn alone, and one has the extra hay to the good.

Is not autumn the best time to top dress meadows?

Immediately after harvest is an excellent time. This protects the roots of the plants and gives them needed food to increase the root growth, but they may be top dressed with great profit at any time before the grass starts.

What mixture of grass seed is best for a meadow?

A meadow should have a very different seeding from a pasture. It is desirable that the grasses should grow tall as well as thick and mature at practically the same time. What to use will be determined somewhat by the character of the soil and whether it is to continue for more than one year. If for only a year, clover, timothy and redtop in the proportion of six quarts of clover (two of which shall be alsike), four quarts of timothy and two of redtop will make a very desirable seeding. If for a meadow to stand several years for marketable hay, then from eight to twelve quarts of timothy, two to three of redtop and about two of alsike.



The Timothy Crop

Is it advisable to sow redtop or Kentucky blue-grass on land that fails to grow timothy?

Redtop will grow on land that fails to grow timothy; it will not pay to sow Kentucky blue-grass. Land that is in this condition needs attention, and it would much better have sown on it something to make a cover crop, such as rye, than to attempt to make meadow of it.

How will Kentucky blue-grass do on muck soils?

One cannot expect a very good permanent stand of any grass on such soils, they are too much inclined to heave. This seed is expensive and because of the lack of permanency will scarcely pay to use under such conditions. It would be better to use redtop and Canada blue-grass. The latter is much less valuable as a feed and the seed costs less.

Would you recommend the use of redtop on land that is used for grain in a regular rotation?

Yes, it will grow readily on all sorts of land, and one will get more hay from two or three kinds of plants than if there were only one.

Will a seeding of orchard grass produce a good meadow?

No. This will afford a very good stand of hay which will mature in early June, but the quality is not of the best. It will grow again later, but the use of this grass for meadows is not to be recommended.

What kind of millet would be the most profitable to sow for hay and how much to the acre?

The barnyard millet will make more hay per acre than the other sorts. It is a little coarser and for that reason should be sown slightly thicker. From a peck to twelve quarts per acre is sufficient seeding.

Would you advise seeding a meadow to timothy and clover at the first year's plowing, in other words, on the sod?

Ordinarily not. While it is true that good seeding can be obtained in this way, it is only when the most thorough fitting takes place accompanied by an abundance of some kind of quickly available fertility. The growing of a hoed crop, whereby the soil can be thoroughly stirred and the grass roots rotted, will be very much more favorable for the formation of a good sod.

Which is the better time to seed, in spring or fall?

It is always a good plan to follow nature as closely as possible. Nature sows her seed in the fall and with timothy and redtop this is almost vital because, if sown alone, the plants are large enough in the spring to make a satisfactory crop of

grass that season, and, if sown with winter grain, they are large enough to withstand the competition of the grain. Nature also sows her clover seed in the fall, but it is usually so well protected that very little of it germinates until the next spring.

Is early or late sowing of clover seed the better, especially on light land?

My experience has been, taking a period of years into consideration, that the clover seed if sown in late March or early April, when the frost is going out and the ground is honeycombed by it, will go into the cracks in the soil and thus have depth of root, which is important, and usually will not start until danger of injury by frost is past. It will thus make a good deal of growth before the grain with which it is sown overshadows it. The important thing is to have it deeply covered. Where it is sown late, it will usually germinate well, but it is so small that it is likely to be injured by drought and heat after the grain has been removed. Unless clover can be sown not later than the last of August, there is a good deal of risk entailed in sowing it in the fall.

Is it the usual practice to sow six pounds timothy and seven pounds red clover with one pound of alsike clover on the grain crops? At the present prices of grass seed would you recommend a heavier seeding?

It would be better to sow five pounds of red clover and two of alsike. This would decrease the cost and at the same time allow for a more liberal seeding, since there are twice as many seeds in a bushel of alsike as in one of red clover. The alsike also will grow under conditions where the clover will fail. It makes excellent hay, although not yielding as much per acre as an equally good stand of red clover, and gives no second crop, but it will stay in the land for years. At the present high prices of seeds it is more important to have that which is pure and of high germinating power than to increase the quantity per acre with seeds of unknown quality.

What do you think about sowing oats and grass seed, using phosphate for fertilizer and top dressing with stable manure the next winter?

This plan would be all right if the grass seed could be made to endure until the winter. A top dressing would both protect and feed it.

What bad weeds are we likely to get in clover seed? What in timothy?

(a) Dodder, Canada thistle, dock, buckhorn and wild carrot. Dodder is by far the most important of these and also very common. (b) Timothy rarely contains seeds of bad weeds. Seeds of Canada thistle and orange hawkweed are occasionally found.

Is it usually successful to seed timothy after oats?

Oats is never a good crop with which to seed, since it draws heavily on plant food at a time when the tender grass seeds need it, and it also needs a great deal of moisture. The better plan is to refit the oat stubble and sow the grass seed alone in early September. Under favorable conditions, however, timothy can be sown with oats and a good stand obtained.

Is it advisable to use timothy in an ordinary rotation — is it not an exhaustive crop?

This is one of the most certain grasses to grow and for that reason should have a place in the ordinary rotation. It is not so valuable for hay, unless cut very early, but because of its certainty it has a place and when grown according to the laws of timothy is an exceedingly valuable money crop. It is somewhat exhaustive, but not so much so as oats or other cereals.

Does a timothy sod improve the soil?

Yes, it supplies vegetable matter, and the heavier the sod the greater the improvement. There is no nitrogen obtained from the air as in the case of the clover.

Is the "Clarke method" of grass culture advisable on an 80-acre farm?

Yes, modified to suit farm conditions. Mr. Clarke did great service to agriculture in demonstrating the possibilities of an acre of hay. While it is true his area was small and the amount of labor applied large, and it would usually be impossible for the average farmer to furnish a like amount, yet the underlying principle remains — that a fine seed bed with the surface thoroughly fine, with heavy applications of first-class commercial fertilizers and manure, and with a

heavy seeding of grass alone in late August or early September, will give more hay per acre than any other known method.

Will it hurt meadows to cut aftermath when it will yield a ton to the acre?

The meadow will not be in as good condition as though this aftermath were left, but it is too valuable to use in this way and there is some danger of the excessive growth smothering out the plants. It would much better be removed and fed, and its value will permit of the application to the land of a liberal dressing of fertilizer which will be worth more to it than the aftermath.

Would you favor pasturing the second growth of clover or turning it under?

If the sod is to be turned immediately, it is a fact that the second growth of clover will be worth more to produce milk or growth in the animals feeding on it than if turned under. The soil will not be quite as much benefited as though this were left on, but much value will accrue from the root growth, and, as an economical proposition where the upbuilding of the land is not the only consideration, it is better to feed it.

On sod plowed for wheat can a catch of clover be expected in the spring?

Yes, if the land is thoroughly fitted, is not sour and has plenty of available fertility. Otherwise it is much better to put in a cultivated crop before seeding.

What method would you advise for reseeding and renewing an old meadow on a creek flat — clay soil — which at times is likely to overflow and wash and therefore cannot be plowed with safety?

It is a difficult matter to renew an old meadow of this sort without plowing it. It would be wiser to plow it early in the season or, if the crop of grass was worth cutting, immediately after it was removed. Plow with a lap furrow so as to leave the sod on edge as much as possible, then roll and thoroughly pulverize until about the first of September. In the interval an application of 1,000 pounds of quicklime, worked in, will be of unquestioned benefit. If manure is available, a moderate dressing, say six or seven loads to an acre will pay well. Failing in that, a fertilizer composed of 4 per cent. nitrogen, 8 per cent. phosphoric acid and 5 per

cent. potash, at the rate of not less than 300 pounds per acre, drilled in at the time of seeding, will help to supply needed plant food. If the land is intended for meadow, sow twelve quarts of best timothy with three quarts of redtop. Sow the seed both ways to insure an even stand. With this sow about one bushel of oats per acre. This will protect the young seed and will help to hold the land from washing during the winter. Three or four quarts of alsike may also be sown in the spring. Unless the washing is very severe this should give a good stand.

What is the cause of the condition called "sod bound" ?

This condition is generally brought about by lack of vegetable matter in the soil or by heavy tramping of animals, and in both cases the soil is usually sour. The remedy is the plow, lime, plenty of tillage and applied fertility.

Why has early-cut hay the most nutriment as feed?

After the hay plants have passed beyond the blossom stage the sugar and starch and other digestible nutrients turn into woody fibre which is very indigestible. Experience has shown that hay cut before it has come into blossom will produce as much milk or growth in the animal as the same amount of hay come to maturity and a pound of grain daily in addition.

How should clover be cured?

The value of this hay is very much enhanced if it is cured in the cock by sweating, rather than by exposure to the sun and air. To do this to best advantage, clover should be cut after the dew is off, and, unless very light, it should be allowed to lie and wilt in the swath until the next day. Then if heavy it may be passed over with a tedder, but this should be done before it dries or the leaves will be broken off. Rake in windrows and put it in cocks in the heat of the day. The heat will promote the sweating process. After it has stood for twenty-four hours it may be opened just enough to expose it to the air, but not enough to make it brittle, when it can be safely put in the barn. There is

little fear of spontaneous combustion where hay has gone through this sweat, but much where it must take place in the building.

Would it be an advantage to sow lime on sod land? Would it work into the soil through sod?

It would be an advantage to sow lime even upon the surface of sod. The wiser way to apply lime, however, is when seeding, in order that it may be harrowed in and brought in contact with as large a number of soil particles as possible.



A Good Hay Rigging for Sidehills

PASTURES

*"The cattle in the fields and meadows green,
Those rare and solitary, these in flocks pasturing."*

MILTON

What is the best seeding for a permanent pasture?

It is desirable to have a succession of grasses occupying the ground the entire season and thus affording both early and late feed. If the soil is heavy the following will be found excellent: Kentucky blue-grass, 25 pounds; white clover, 10 pounds; perennial rye grass, 30 pounds; red fescue, 10 pounds; redtop, 25 pounds. This assumes that all these except the white clover are in the chaff. Sow 35 pounds per acre. If one can get the recleaned seed, usually less than half the number of pounds per acre will be required. For light, sandy soils, Canada blue-grass, 5 pounds; orchard grass, 5 pounds; tall rye grass, 5 pounds; perennial rye grass, 20 pounds; redtop, 35 pounds, using 40 to 45 pounds per acre. It will be better in most cases to add to either of these mixtures 5 pounds each of red clover and timothy. Mow the field the first year, which will give the grass opportunity to become firmly rooted, and it will not be injured by pasturing as is likely to be the case if stock is put on the first season.

What kind of seed could be sown to renew an old pasture that is too stony to till?

A mixture composed of orchard grass, 6 pounds; redtop, 4 pounds; Kentucky blue-grass, 4 pounds, and 2 pounds each of alsike and white clover will be excellent. This gives a variety of plants which will occupy the ground during the entire season and will supply both early and late feed.

Can one raise a crop of grain and seed pasture grass with this?

In fitting the land for pasture it is always better to sow the seed alone in the late summer or early September, without any other crop. If the conditions are favorable — suffi-

cient moisture and an abundance of fertility in the soil — one can occasionally sow these seeds with a grain crop, harvest the latter and have the pasture come on later; but he is taking chances which are against his success. If the pasture is the thing most desired, the grasses that constitute it should eat at the first table.



Would orchard grass sown on pastures occasionally keep the pasture good?

The chief value of orchard grass is that it comes on very early in the spring and affords feed before the other grasses are large enough. If left to grow, it becomes very hard, and stock will not eat it.

What seed is best to sow in the spring for summer pasture?

Nothing is better than oats and barley. Whether this will pay for the labor and the cost of the seed is questionable. It would be much better to sow some crop like oats and peas, let them come nearly to full growth, and feed in the stable.

Is it profitable to sow lime on old, worn-out pastures?

Most old pastures are acid, and in such soils lime is always a benefit. But it must be remembered that lime will not destroy noxious weeds that are in so many old pastures, neither will it alone cause the good grasses to grow unless seed is sown.

What is the best way to improve an old pasture?

In most instances if the pasture is tillable the best way is to break it up, plant with corn, and the following year, in

August, reseed with a variety of pasture grasses after thoroughly fitting the land, applying a liberal dressing of lime and commercial fertilizer and, if obtainable, a moderate dressing of stable manure. If the pasture is untillable, scarifying the ground in early spring with a harrow, sowing lime with four or five hundred pounds of fertilizer analyzing about 4-12-5, and then sowing a mixture of pasture grasses, will many times materially help the old pasture.

How may moss be eradicated from a pasture that cannot be plowed?

The presence of moss indicates either a sour soil or the absence of desirable plant roots, usually the former. On unplowable pastures an application early in the spring of at least 1,000 pounds of quicklime or 1,800 to 2,000 pounds of the carbonate or ground limestone is the proper remedy. If this can be incorporated with the soil by stirring it with a harrow it will be much more effective. Some pasture grass seed may then be sown, and this will supply desirable plants.

Does it pay to keep fertile, low land in pasture?

This depends largely on the system employed on the farm and the character of the pasture. No lands usually afford better pasture. One such pastured for over twenty years is considered one of the most profitable fields on the farm. Such land usually supplies good feed when the upland pastures are drying up.

If rye were pastured during a summer would it live through the following winter?

The rye plant usually dies at the end of the year after it is sown, but if it is kept cut or eaten off, the tendency will be to somewhat prolong its life. But one should not expect very much pasture after the first season.

Would you consider it advisable to let young trees, mostly hemlock and maple ten to twenty feet tall, grow into a forest on a medium pasture?

Many fields which cannot be cultivated should be planted to forest trees. They will be valuable in the future.



Red Clover on Limed and Unlimed Land

CLOVER

. . . *“what is the lily and all the rest
Of the flowers to a man with a heart in his breast,
That was dipped brimmin’ full of the honey and dew
Of the sweet clover blossoms his babyhood knew?”*

JAMES WHITCOMB RILEY

Is it the lime or potash in hard wood ashes which encourages the growth of clover?

Both are beneficial to the growth of clover. In this case it is doubtless a combination of the two.

Is lime necessary for culture of sweet clover?

It does not seem to be so, as this clover grows on the sandy beaches which certainly are deficient in lime.

Will red clover grow where sorrel grows?

Yes, if the soil is sweet so that the clover bacteria can thrive. The sorrel may be there because no better plant has been sown. Sorrel will also grow on land too sour to produce red clover.

Why is it harder to get a catch of crimson clover than of red clover, and which is the better to plow under?

The former germinates very much more readily than the latter, but being a southern plant is more liable to be affected by the cold of the winter and the freezing and thawing of the ground than the red clover. When it thrives it makes a more rapid growth than the red, and for that reason is very valuable to plow under.

Why do not clover roots stay longer in the ground?

Clover is a biennial, that is, it grows one year, the second year grows seed and then dies. This is the main reason why clover does not last longer. Another is that the clover midge is very abundant over the state and even where the soil is very rich and the roots possess vitality enough to continue longer than the allotted period, this insect working on the roots destroys them.

Have you ever known of the successful practice of seeding clover with dent corn? Outline the methods followed.

It is quite a common practice in the West and in parts of this state also, to sow clover at the last cultivation of the corn. It would make no difference whether it was dent or flint. Some good seedings are obtained this way, but the corn stubble and irregularity of the soil makes it a very poor meadow, when it is intended for such. As a growth to plow under for fertilizing purposes the practice is to be commended.

Has the bumblebee anything to do with pollenizing clover seed?

Yes, he is the only insect with a proboscis long enough to penetrate the deep blossom of the clover and so pollinize it.

Should alsike and common clover be cut in the same stage of growth as alfalfa?

Practically when half the plants are in blossom.

Does alsike as well as red clover supply nitrogen?

It is a nitrogen gatherer, but having less stalk as well as root growth, it is inferior to the red for this purpose.

Which contains the more protein, alsike or red clover?

This depends more on the particular crop and the time that it is gathered than as to whether it is alsike or red clover. The former being a finer stalk is somewhat more digestible, and, given the same degree of maturity and proper curing, it is to be preferred, although the yield will be less.

What is your opinion of sweet clover as a substitute for alfalfa?

Unquestionably there is very much more value in sweet clover than has been supposed. It will by no means take the place of alfalfa, but because it grows so readily and very often on poor soils its further culture is to be recommended. It should be cut before the heads appear, when it has a high food value and is very much relished by stock. Left as it usually is, until the blossoms are well out, the stalk is hard and woody and nothing cares to eat it.

ALFALFA

"If corn is king and clover queen, alfalfa is the ace in the pack."

JOSEPH L. HILLS

How get alfalfa started and what kind of ground does it need?

To obtain a stand of alfalfa it is first necessary to have a deep, rich soil with the watertable at least two feet below the surface, practically free from weed seeds and full of available plant food either from manures or fertilizers, made sweet by the use of lime, which also is a necessary food for the alfalfa, and the soil must contain alfalfa bacteria. In most soils it is necessary to supply both lime and the bacteria. A crop of corn after the land is broken, heavily fertilized and thoroughly tilled, is a good beginning. This followed by oats and peas, sowed in early spring as suggested in previous answers, then the alfalfa sowed in early August, is a good method.

Will alfalfa grow on a shallow limestone soil? How long will it stay down?

Limestone soil is the natural home of alfalfa, and on such soils it will grow more readily than anywhere else. Of course, the deeper the soil the better. Just how long it will stay will depend largely on how well the soil is underdrained, and how thoroughly it is supplied with all the necessary elements for its growth — anywhere from three to twelve years.

Will heavy clay ground raise good alfalfa; and how should the ground be prepared?

Yes, some of the most successful fields are growing on this kind of land. The first essential is a thorough underdraining, then such fitting as will free the land from weeds and thoroughly fine it. Next, plenty of available plant food, from both manure and commercial fertilizers, and then plenty of lime and inoculation.



Curing alfalfa under cock covers

Will alfalfa grow on dry, sandy loam?

I have seen alfalfa grow on the sands of the ocean counties of New Jersey, but it is much more difficult to start and maintain a stand of alfalfa on sandy land than on the heavier soils.

Can it be started on light, sandy soil by heavy applications of commercial fertilizers?

One of the essentials of growing alfalfa is an abundance of vegetable matter in the soil. This is usually deficient in the sandy soils, and it is exceedingly doubtful if the application of commercial fertilizers alone would insure a stand. In addition to the vegetable matter there must be lime, and most soils need inoculation.

Can alfalfa be successfully grown on hardpan soil by using plenty of lime?

If such soil is thoroughly underdrained, alfalfa does well on it, but it must be made very fine, and usually fertilized and inoculated as well as limed.



Growth of Alfalfa Seeded Seven Years

If watertable (or hardpan) is too near the surface for growing alfalfa, will subsoiling help to remove this trouble? Will it not assist in draining the land?

This subsoiling will materially assist and may ensure a stand; but a safer and in the long run better plan would be to underdrain.

Will alfalfa grow on wet land?

Alfalfa will not grow where there is standing water. It is useless to sow it on such land.

Can alfalfa be grown on creek-bottom land, and how?

It will grow on such bottoms, but not so readily as on drier lands containing more lime. It is therefore particularly essential that on these bottoms there be an abundant application of lime. Otherwise, the same general methods employed in getting a stand of alfalfa will be required here.

Would an old garden be a suitable place to try alfalfa?

Many have been very successful in getting a first stand of alfalfa on an old garden patch. Such is usually full of decayed vegetable matter, available plant food, in good tilth and free from weed seeds. After such a plot is established, soil from it can be obtained to inoculate larger areas.

Is it safe to sow alfalfa on a clover sod?

It is much better to break up the clover sod and grow a hoed crop prior to sowing alfalfa, than to attempt to sow it on the upturned sod.

Would a potato field, once cultivated, be a good preparation for alfalfa?

A field that has grown a crop of early potatoes is a very good place to sow a field of alfalfa, but one cultivation is entirely too little. One of the vital necessities of a good stand of alfalfa is a thorough fitting of the seed bed; this for two reasons: First, to thoroughly fine the soil; second, that all weed seeds within a few inches of the surface may be sprouted and destroyed.

Is chestnut soil good for alfalfa?

Chestnut soil is usually a dry soil and deep and for that reason should be very suitable.

Will alfalfa grow on quack ground?

The chances would be decidedly in favor of the quack, because it would smother out the alfalfa and occupy the ground before the latter got a foothold.

For the successful growth of alfalfa is it necessary to inoculate the ground with soil containing bacteria?

Inoculation is but one factor in establishing a stand of alfalfa, but it is a very important one; and unless one is certain that his soil is so inoculated it is very unwise to do all other things necessary and fail to inoculate.

How is the best way to get inoculation of the soil?

The surest, most practical way to secure inoculation is to get the soil from an alfalfa field free from weeds and as near home as possible. The field may be inoculated with the soil where the sweet clover (*melilotus alba* L.) has grown, but the great objection to this is the fact that such soils are usually full of noxious weed seeds, and after one has spent a good deal of time to rid his land of such seeds it seems unwise to re-sow them. The various prepared cultures are giving better satisfaction than formerly, but where soil is obtainable this is more desirable.

Can one use soil from a one-year-old alfalfa field for inoculating a new field?

Any soil where the nodules have formed on the roots of the alfalfa plant is suitable for inoculation. It is safe to assume that a field that was flourishing at the end of the year should have an abundance of such inoculating bacteria. In some instances abundance of nodules have been found on roots where the plants had only been in the ground for six weeks.

What time after liming is the best for inoculating soil?

The inoculation should be done shortly before sowing the seed, and the land should always be harrowed immediately after the bacteria is applied so that it will be mixed with the soil and not destroyed by drying, as will be the case if left on the surface and exposed to the sun.

How does laboratory culture compare with soil for inoculation?

It is not so good. While good results have been obtained with some of the cultures recently put out, the soil from an old field containing the bacteria is to be preferred. Care should be exercised that this soil is free from weed seeds and not exposed to the sun, which may destroy the bacteria.

Does a heavy clay soil on which clover grows abundantly need inoculating for alfalfa?

A soil that grows any legume is, generally speaking, a soil where alfalfa will more readily adapt itself than one where legumes do not grow. But the fact that clover grows is no indication that the soil does not need inoculation for alfalfa. I have had alfalfa fail signally without inoculation where clover blossomed in the stubble the same year it was sown.

What amount of white clover soil is necessary for one acre of alfalfa; to what depth is it safe to take the clover soil and how should it be applied?

There is no evidence to show that the bacteria of the white clover is the same as that of the alfalfa, or that it would have any material effect in maintaining a stand of the latter; but that from the sweet clover is the same and will be found most abundant three or four inches below the surface.

Will manure made by feeding alfalfa hay inoculate the soil on which it is placed?

The alfalfa bacteria should be plentiful in the manure made from feeding this hay and is one way of inoculating the soil. Many have purchased a carload of alfalfa to feed to their stock for this purpose. The quicker and shorter way is by the use of the inoculated soil as in previous answers.

Would you advise sowing alfalfa seed with other seeds in order to inoculate land so it would be in condition to grow alfalfa?

It is an excellent plan to mix a little alfalfa seed with the clover and sow it on such fields as it seems likely alfalfa will do well on, not so much to obtain inoculation as to determine its adaptability; for while this would help to inoculate, at the present price of seed (22 cents a pound) it is a pretty expensive form of inoculation when 300 pounds of earth (which, if it need be purchased, would not cost more than \$1) would inoculate a whole acre very much more satisfactorily than the chance seed.

How long will the bacteria remain in the soil and how many crops may intervene between the first and second crop of alfalfa before inoculation is necessary

If the soil is full of vegetable matter, the bacteria will remain a long time, and a field once thoroughly inoculated will remain so for years. If the vegetable matter is lacking, the bacteria will die within a year or two and the alfalfa also.

What is the proper treatment for an alfalfa field after it is once established?

Occasional top dressings with manure free from weed seeds will do more to maintain a plot of alfalfa than any one thing. Not having the manure, a dressing of four or five hundred pounds per acre of fertilizer containing 10 per cent. of phosphoric acid and 5 per cent. of potash, or an application of lime, will be advantageous.

Is it advisable to use horse manure alone?

There is no objection to using this manure so long as it is free from weed seeds.

Would it be well to plow under manure for alfalfa or spread it on top after the plants have started?

If the manure is free from weed seeds it is much better to apply it on the surface and work it in. It acts both as a mulch and to make plant food available right where the rootlets are starting.

Will potash show on alfalfa as well as phosphoric acid?

Potash seems to be particularly necessary for all plants of the clover family. Both are desirable and necessary.

Are unleached ashes good for alfalfa, and how much to the acre?

Yes. They contain lime, potash and phosphoric acid. If buying ashes, buy only on a guarantee. Use not less than a ton to the acre.

Is it possible to start alfalfa without liming the soil?

It is possible, but it is safer to apply lime.

If we apply both lime and stable manure to alfalfa at time of seeding will not the lime tend to set free the available nitrogen of the manure? Would it not be preferable to apply manure the year before?

As most manures contain more or less weed seeds, and timothy also being a weed in an alfalfa field, it is an excel-

lent plan to make a liberal application with the preceding crop. Nevertheless, there is little danger of the lime setting free the nitrogen in the manure if the two are thoroughly incorporated with the soil, even though they are both applied at the same time.

How much lime would you advise to the acre for alfalfa seeding?

One should use not less than a ton of caustic lime (calcium oxide), or 3,000 pounds slaked lime (calcium hydrate), or two tons of ground limestone (calcium carbonate). These would give approximately the same quantity of lime in each case.

Is ground lime rock better than caustic lime for alfalfa and the soil?

Some successful growers of alfalfa contend that the ground lime or carbonate gives better results for alfalfa than the other sorts. This has not been thoroughly proven — either is good. It is very largely a question of fineness and the amount of calcium one actually applies. Nearly double the amount of ground lime must be used to get the same amount of calcium as with the caustic, assuming that they are both from the same quarries.

Would the full benefit of lime be had if sown on alfalfa the spring after it was started, the alfalfa being a foot or so tall; no lime sown before seeding?

No, not the full effect, but good results can be obtained in this way. It would not do to apply it when the alfalfa was a foot tall, but earlier, or after the first cutting had been removed, lime could be applied with advantage.

How shall we apply lime to alfalfa after it has been seeded several years?

The lime may be applied on the surface of the soil in any way practicable. This will not be as effective as where it is mixed with the earth at the time of seeding, but excellent results have been obtained by such surface application.

Will nitrate of soda and South Carolina rock put on with a drill make a good top dressing for new alfalfa seeding?

Yes, but it is better to put with it some muriate of potash. An excellent combination is 500 pounds of nitrate of soda, 1,300 pounds of rock and 200 pounds of muriate of potash.

What is the matter with my alfalfa? I had a good stand; it grew until it was about ten inches high, then turned yellow and disappeared?

The probability is that the soil either lacked lime or proper inoculation. Quite frequently alfalfa will make a good growth for even a year or more and then disappear for lack of lime as a necessary food. This can be easily understood when it is known that each ton of alfalfa hay will take from the soil about forty pounds of lime. It may be, too, that the available nitrogen in the soil was exhausted, and no nodules having formed on the roots the alfalfa turned yellow and died, as suggested, for want of it. The course of action is clear enough—lime and inoculation, perhaps plant food.

Where wells furnish hard or lime water, is it necessary to apply lime to a field intended for alfalfa?

The fact that water in the wells is hard is not sufficient evidence that the soil adjoining does not need lime for alfalfa. The well water may come through strata from miles away.

Does alfalfa take more lime from the land than other grasses?

Soil on which alfalfa is grown will steadily improve. It is continually obtaining nitrogen from the air, and as the roots go very deep, considerable amounts of mineral fertilizer are drawn from the subsoil not obtainable by grasses.

Can the farmer grow and gather his own alfalfa seed in this climate?

No, the alfalfa seed grown east of the Mississippi River has been much less satisfactory than that grown west.

Where can alfalfa seed best suited to New York land be obtained?

Any reliable dealer in farm seeds should be able to supply a good grade of alfalfa seed. It should be from this country, preferably, as stated above, grown west of the Mississippi River. The experiment stations will test such seed for purity, free of charge, and anyone can readily test for germination.

Will alfalfa seed one year old be as safe to sow as new seed?

If the seed has been kept in a dry place it should show a high germinating test at the end of one year. In such cases it is wise to select from different parts of the package

a hundred seeds and sprout them; then one can readily determine what per cent. will germinate, and be governed accordingly.

How may alfalfa seed be sown, and how deep?

Alfalfa may be sown by hand as one would sow clover seed (only slightly thicker), or it may be sown with a seeder, about the same depth as clover. It should be lightly covered and if the ground is dry, rolled.

What is the proper amount of alfalfa seed to sow per acre?

If the seed is of high germinating power (at least 90 per cent.) and free from weed seeds, 20 pounds per acre will be a sufficient amount for good, thick seeding. It is always wise to sow the seed both ways, in order that there may be a perfect stand.

What treatment should be given sod ground in the spring with a view to seeding to alfalfa in August of the same year?

It is not the best plan to attempt to sow sod ground with alfalfa the same year. If this is attempted the sod should be thoroughly disked before plowing. This causes a quick decay of the vegetable matter and permits a union of the bottom of the furrow and the subsoil, which is not easily obtained if the sod is turned under intact.

When is the best time to sow alfalfa?

Early August, following a crop of oats and peas. It is often sown in the spring very successfully in well-prepared soil.

When sowing alfalfa in August should it be sown with a winter crop or alone?

By no means sow a so-called nurse crop with alfalfa in August or at any other time. This might better be termed a robber crop.

In seeding to alfalfa would you advise sowing the seed after harvesting a crop of oats and peas?

This plan has given excellent success all through the eastern part of the state and in other sections as well. There is something about the pea that seems to make it an excellent preceder of alfalfa, and the oat and pea crop in itself is an

exceedingly sure and valuable one. Where failures have resulted it has usually been either because the oats and peas have been allowed to grow too long, thus exhausting the moisture and fertility from the soil, or where the land has been left unplowed until just prior to seeding the alfalfa. This last alone, except in very wet periods, is fatal to the stand of alfalfa. The soil must be firm beneath, with a fine seed bed at the surface. In seeding after oats and peas it is imperative that the ground should be turned immediately after taking off the crop the last of June or early in July, and worked from then until the time of seeding in August. In one experiment an acre of land was left fallow and three acres adjoining grew a crop of oats and peas. The preceding and subsequent treatment was exactly the same in both cases, but the better growth of the alfalfa where the peas and oats had been taken off was manifest as long as the field stood.

Since alfalfa should be sown late in the summer, would it better root conditions to cut it, letting it lie on the ground as cut?

When alfalfa is sown in late summer never cut off the tops later in the fall. This would expose the crowns unduly; and, such growth being soft, it will readily decay and not be objectionable the coming season.

Barley seeded to alfalfa last spring resulted in a splendid catch. Would you advise disking and reseeding this spring?

If there is a splendid catch there would be no need of reseeding. The disking of alfalfa in the East is of doubtful merit. If there is only a partial stand of the young plants, we would rather stir the ground with something not so severe as the disk and put in some additional seed.

Would alfalfa catch in corn or beans if sown after their final cultivation and lightly covered with the weeder?

Considering the high price of alfalfa seed this would be rather a risky plan, except in sections where alfalfa has become thoroughly established.

Would it be advisable to sow alfalfa in a young orchard?

No. Alfalfa should be a permanent crop, and such a crop should never be in a young orchard. One of the clovers

will be very much cheaper and altogether better adapted to an orchard if a leguminous crop is the thing desired.

How should alfalfa ground be plowed after being seeded seven years or more?

Ordinarily, if the stand of alfalfa is good it is unwise to plow it, no matter how long it has stood. If it seems wise to turn it, a plow with a sharp share and with good strong horsepower in front of it are necessary to turn the sod.

What can be done with a piece of alfalfa that is spotted; that is, some of it killed and other places all right?

If the places were only small where there was no stand, it would be a practical thing to sow in some more seed and cover, but if they are any appreciable part of the whole ground it would be much better to plow and reseed.

Is it well to sow alfalfa on wheat?

In sections where alfalfa grows as readily as does red clover this is done with advantage, but not otherwise.

Why not sow the alfalfa seed with peas and oats, cutting the peas green for hay?

The peas and oats grow so rank and shade the ground so thoroughly that the alfalfa has very little chance. If the seed were cheap, one might afford to run the risk, but at the present price of over twenty cents per pound it is much wiser to give alfalfa entire possession of the ground.

Would you advise sowing red clover with alfalfa to be sure of a crop in case the alfalfa does not grow?

If the field is designed for alfalfa alone it is not wise to put red clover with it. It is a more rapid grower than the alfalfa and, with soil in proper condition to grow the latter, will make a very rapid growth and tend to crowd out the alfalfa plants. If one is experimenting it is permissible to mix the two.

Might barley be sown with alfalfa in the spring on weedy soil?

It does not pay to sow alfalfa on weedy soils at any time of the year, either alone or with anything else in most cases. The sowing with it of so-called nurse crops, such as barley, is not to be recommended, because while they afford protec-

tion at the outset, later they take the nutriment and the moisture that the alfalfa needs.

How long should an alfalfa seeding last?

This depends somewhat on the nature of the soil. Four or five years in any event, and in some cases it has stood many more.

How far below the surface of the ground, if the soil permits, will alfalfa roots extend?

Marvelous stories are told of the depth to which alfalfa roots have grown. Ten or a dozen feet is not at all unusual.

In determining the proper time to cut alfalfa are you governed by the blossom or by the stools or shoots starting out near the ground?

When the shoots start near the ground from near the crown of the plant it indicates the proper time to cut alfalfa. This is a much better way to determine than the stage of the blossom.

Does it kill alfalfa to let it get ripe before cutting?

To allow any plant to come to seed is detrimental to its best growth and tends to shorten its life. Alfalfa hay standing until ripe will be hard and woody and of comparatively little value.

How close to the ground should alfalfa be cut?

About the same distance as hay, perhaps three inches. If cut higher than that there will be a stub left and if closer, the crown may be injured.

How should alfalfa be cured?

Mow the alfalfa after the dew is off, allowing it to lie in the swath that day. If the stand is heavy, the next morning before it is dry it may be stirred with a tedder, then raked and cured in the cock. If it is allowed to dry before it is handled many of the leaves, which are the most valuable part of the plant, will be shaken off. It can stand in the cock from twenty-four to forty-eight hours, and will then have gone through the heating process. It can then be opened and aired and put in the barn with safety. Alfalfa will stand very much more wetting after it is put up than will

clover hay, and it is better to let it stand at such a time than attempt to open it up and have the whole mass wet. After it has stood for at least three days, it is wise to move the cock bodily to a new place, or the plants under it may be smothered out.

Cannot fine alfalfa be cured in windrows and handled with a hay loader successfully?

Alfalfa should be cured in the cock, as there is a good deal of moisture in the stem and this can best be transpired by sweating. The most valuable part of the plant is the leaf, and where it is allowed to dry in the windrow and handled with the loader many of these are lost.

Do you consider it detrimental to the plants to cut alfalfa for green fodder or, in other words, to use it as a soiling crop, beginning to cut as soon as large enough to mow?

Not if the field has been standing more than a year. With the first cutting it has been found detrimental to cut for soiling purposes before the alfalfa shows sprouts from the roots.

Is it safe to feed alfalfa hay to sheep and horses?

Yes, to both if an excessive amount is not fed. This hay is exceedingly rich in protein, and the stock are very fond of it. Fed in excessive quantities it tends to increase the action of the kidneys, and the after effect may be injurious.

Do you consider that there is much danger in feeding alfalfa green or sun-cured?

If the alfalfa is only wilted, the animals eating it will sometimes be affected with bloat. Care should be exercised in this direction. If it is sun-cured, there will be no ill effects from its feeding; however, its food value will be decreased.

Would it do to pasture alfalfa after cutting the last time in the fall?

Alfalfa in New York does not stand pasturing well. The stepping upon the crowns seems to kill them.

How much more value is there in alfalfa than in red clover?

There is about six pounds of digestible protein to the 100 in red clover, and over ten in alfalfa. The yield per acre of alfalfa is also greater and the seeding more lasting.

Will alfalfa take the place of bran for filler in gluten feed?

Doubtless the questioner by "filler" means a lightener, and alfalfa will certainly do that. It has been determined by practical feeding that eleven pounds of well-cured alfalfa hay containing all the leaves will take the place of eight pounds of bran.

What is dodder in connection with alfalfa?

Dodder is a seed somewhat smaller than the alfalfa in which it is often found as well as in our ordinary clovers. It germinates in the soil and then attaches itself to the stalk of the alfalfa and lives on it and not from the soil. Where it has grown it will form a mass of small rootlets which, when cut, resembles the fleece from a sheep. It is altogether worthless and will destroy the valuable clovers.

Will dodder seed live and grow after the ground is tilled, and will it live on plants other than alfalfa and clover?

The danger from the spread of dodder has been very much magnified. It can only live on such plants as alfalfa and clover, and where these host plants are lacking it must die. Further, experiment has shown that only a few varieties will seed over and live in this climate.

How about alfalfa as a money crop as compared with other crops?

Alfalfa with a very moderate crop in the three cuttings will yield three tons of hay per acre. This past winter such hay has been selling at from \$25 to \$27 per ton. This would make a value of about \$75 per acre; and the crop is not an expensive one to harvest and is not like an annual one where there must be expense for seed and labor each year. While this price is above the average, when it is considered that 2,500 pounds of alfalfa hay is equivalent to a ton of bran and the price of bran is taken into consideration, it will be seen that the money value of this crop ranks well with others.



OATS

Which is better for oats, spring or fall plowing?

This will depend somewhat on the soil. If it is a heavy soil the fall plowing is to be preferred. The frost will have some effect in loosening up the soil, and the oats, which is a cold-weather plant, can be sown a good bit earlier than where the plowing of such land is delayed until the spring. This also applies to sod land which it seldom pays to sow to oats unless fall plowed. With the lighter lands, spring plowing is better.

How many bushels of well-cleaned oats should be sown per acre?

On land at all productive, two bushels is ample. This will admit of their stooling, they will stand up better and a greater yield will be obtained than where they are sown more thickly.

Is it always advisable to grade out all of the small oats for seed?

Nothing will pay better than the thorough grading and screening of seed oats. Thus only the strongest, plumpest grains are left, possessing greater vitality and higher germinating power.

Is there any way to cure smut in oats?

The oats may be spread on the floor and sprinkled until they are damp with a solution made from one pint of formalin (40 per cent. strength) to thirty gallons of water.

Cover them over with a blanket for twelve hours to retain the fumes of the solution, then shovel them over to prevent heating. This will swell the kernels some, and the drill should be set thicker to make up.

Would it be advisable to treat oats a month before sowing?

Seed oats may be treated with formalin a month before sowing, provided they are well dried before storing. Do not place the treated seed in bags which have held smutted oats until after the bags have been disinfected by soaking them fifteen minutes in the formalin solution.

Should formalin-treated oats be placed where untreated oats are kept?

Formalin is not poisonous. Any treated oats left over from sowing may safely be fed to animals if mixed with an equal bulk of untreated oats.

Is much rain needed to grow good oats?

It will take at least 300 pounds of water to produce a pound of dry matter in oats, and as the greatest growth of the oats is during midsummer when rainfall is likely to be scanty and evaporation great, it will be seen that they draw heavily on the moisture content of the soil.

On land which is infested with mustard, would you recommend sowing oats alone or oats and barley, to be used for feeding stock?

In this case it would be better to sow peas with the oats, since they are much more valuable for food than the barley, and making more dense growth would crowd out the mustard. In either case this should be cut while the crop is green before the mustard seed matures, and it will make not only excellent stock feed, but will prevent spreading of the mustard seed which would be the case if it is allowed to mature with the grain.

In what proportion would you sow peas with oats and how get the peas in deep enough?

Half and half is a very good proportion. The ideal way is to plow the peas under first, about four inches deep, and after an interval of four or five days sow the oats on top and harrow them in. This is slow and somewhat expensive.

Putting them both together in the drill and setting it as deep as possible gives excellent results and is to be advised from the standpoint of economy.

Are early-cut oats as good as clover hay?

Oats at no time in their growth are comparable with clover hay. The latter is a nitrogen-gathering plant and rich in protein. The oats lack this, but do make a very good fodder.

Would oats and peas make good silage cut into the silo for fall feed?

These are sometimes put into the silo, but do not make as good silage as corn; first, because all protein feeds produce a different kind of a ferment than the carbonaceous ones; second, because it is more difficult to get them in just in the right stage. Unless the weather is so wet that it is difficult to harvest them, it is much better to cut and make them into hay. This in combination with corn silage makes an ideal ration. Animals fed a succulent food crave a dry one with it.

When is the best time to cut oats for fodder for milk cows?

When the head is just formed, before the milk appears in the grain. When they go beyond this stage the fodder is more unpalatable, and the small light oats are not eaten by the stock.

“ Oats.— A grain which in England is generally given to horses, but in Scotland supports the people.”—Johnson’s Dictionary.

‘ Did you ever hear ’, wrote Sir Walter Scott, ‘ of Lord Elibank’s reply when Johnson’s famous definition of oats was first pointed out to him.’ “ Very true and where will you find such men and such horses? ”

BOSWELL’S JOHNSON

RYE

*"Where full-eared sheaves of rye
Grow wavy on the tilth."*

JOHN PHILIPS

Can rye be sown in the spring?

Spring rye can be sown in the spring and will make a crop maturing about the same time as spring wheat, but the berry is small, the yield less per acre than the winter rye and the straw short. It is not a very profitable crop. Winter rye sown in the spring will not make a growth that season. It is an annual and needs the winter to make its full growth.

Will rye sown with buckwheat get a start sufficient to withstand the winter?

Rye may be sown in late June with the buckwheat, using about a bushel to the acre. It will usually grow very little until the buckwheat has been taken off when it will come up, making a very good stand. This course is to be recommended where the rye is sown for the purpose of a cover crop rather than for a special crop. Where the buckwheat grows very slowly, the rye may make too much of a start and tend more to stalk late in the summer and therefore fail to make the growth later on that it should. An instance has come to our attention recently where the rye used in this way was affected by a blight which destroyed it. This was where the buckwheat did not grow at all.

Where buckwheat and rye are sown together, can the buckwheat be cut for grain and the rye left for a cover crop?

Yes, if you wish to do so, but you would lose just so much of the vegetable matter which ought to be allowed to go back to the soil.

Will rye or wheat that has sprouted in the shock grow if sown in the fall?

Neither rye nor wheat that has sprouted in the shock is fit for seed. Only a small portion of it will be likely to grow, and it is not very valuable for flour. It would better be ground and fed to swine.

At what stage should rye be cut for ensilage?

Rye makes very poor ensilage, the hollow stalk carries into the silo too much air. It is, however, occasionally used and in that case would best be cut when the heads are well formed, but before the grain is in the milk.

Is rye cut green for hay a good horse feed, and how much should be used?

Rye cut and fed green makes a very good forage for cattle, and if cut and cured may be used for horse feed, but it is not particularly palatable and becomes very hard. Its use is not advised for this purpose.

How much protein is there in rye or what is its feeding value?

Rye has about the same protein content as corn, and for fattening stock, particularly swine, is a very good substitute. It is a carbonaceous plant, and where other foods of this character are at hand, it is much better to have the flour taken out of the rye and feed the bran, the analysis of which is very similar to wheat bran.

WHEAT

"God had sifted three kingdoms to find the wheat for this planting."

SHAKESPEARE

At what time of the year should wheat be sown in New York State, how should the ground be fitted, what fertilizers should be used and should the soil be well drained?

In order to grow a profitable crop of wheat in New York State the land should certainly be either naturally or artificially drained. Most of the losses of the crop come from heaving during late winter and spring, and is nearly always



due to defective, or rather complete lack of drainage. It is very seldom that wheat heaves out or is winterkilled on a tile-drained field. Great pains should be taken in fitting the land. Wheat will do much better after barley or beans than after oats because barley being harvested much earlier than oats, gives more time for the preparation of the soil. The former crop takes much less moisture from the soil than does the latter. As soon as the barley is removed, the field should be well plowed as deep as its character and previous tillage will permit. This is a good time to begin increasing the depth of the furrow. In many cases the application of

lime immediately after plowing and before harrowing shows good increase in the wheat crop and a wonderful increase in the following clover seeding. The harrow and the roller should be freely used, the object being to reduce all lumps and at the same time to compact the soil. Never replot after the turning under of the stubble, but depend upon the roller and harrow to accomplish the work. Roll the land the last time immediately before, but not after sowing. Good seed at the rate of one and three-quarters to two bushels per acre should be sown from September 5 to 15 in the latitude of western New York. Two hundred and fifty pounds of a fertilizer analyzing 2-10-8 will, under average conditions, increase the yield.

Would it be profitable to plow under clover sod in the spring and summer fallow it for wheat in the fall?

I should not consider this plan the most profitable or economical for New York State. Better follow the clover with a cultivated crop, like potatoes, corn, cabbage or beans.

Does it pay to summer fallow land for wheat?

Not generally. There may be cases where it is desirable for eradicating noxious weeds.

Would it be advisable to put any chemical or phosphate on wheat for top dressing in the spring?

As a rule, no. But I have seen quite an increase in crop from an application of 200 pounds of nitrate of soda per acre.

Is it a good thing to top dress winter wheat when the ground is frozen?

A top dressing of good stable manure on exposed or thin places is good practice, but it should not be spread thick enough to smother the wheat.

Will it pay the farmer to separate his wheat into three grades, using the first grade for sowing?

Yes, the largest and heaviest kernels should always be selected for seed.

What is meant by spring and winter wheat?

Any wheat, if sown in the spring, will mature seed, but in New York State it is not profitable. The yield is small and the straw light. Spring wheat is grown to quite an extent in the West and in parts of Canada.

Are other kinds of wheat besides Dawson's Golden Chaff, which is especially subject to stinking smut, affected by it?

Some varieties are more subject than others. I do not know that any variety is immune.

What is the cause of wheat turning yellow in the fall?

There may be several causes, such as wireworm, Hessian fly, lack of proper drainage, soil deficient in plant food (particularly nitrogen), careless preparation of the soil.

What is the cost of producing a bushel of wheat in New York State?

Fifty to seventy-five cents.

Would winter wheat do well on oat stubble if harrowed with a disk harrow instead of being plowed?

It is entirely possible to make a good seed bed on oat stubble with a disk harrow, especially if the moisture supply is ample and the soil is naturally fairly loose and friable. It has the advantage, moreover, of not breaking capillarity with the soil beneath and of not bringing to the surface weed seeds to germinate. It is doubtful, however, if this method is labor saving, and it should not be forgotten that the plow in turning the furrow has an effect of crumpling and fining the soil perhaps obtained by no other cultural implement.





BUCKWHEAT

" . . . The buckwheat

Whitened broad acres, sweetening with its flowers the August wind."

BRYANT

What kinds of soil are best adapted for growing buckwheat?

Buckwheat will grow on rather heavy, cold soil, too acid to grow some of the other grains. It also grows well upon a wide range of soils, but does best upon well-drained, sandy loam. Such land, even if poor and in acid condition, will under good management produce profitable crops.

Does buckwheat require a very fertile soil?

Very rich soil produces a heavy growth likely to lodge, and often a very large part of the crop is lost in this manner.

How best prepare land for buckwheat?

Plow early in the spring so that the ground will have a chance to become firm and settled before sowing. The soil should be put in first-class condition before seeding takes place.

What time should buckwheat be sown for grain?

From June 15 to July 10, according to location. Best results are usually obtained by sowing as late as possible and yet have the grain mature. Careful records indicate that the crop will mature in 75 to 80 days from date of planting. The plant is very susceptible to injury from frost, but the setting of grain is always best in cool weather.

What do you consider the proper amount of buckwheat to sow to the acre?

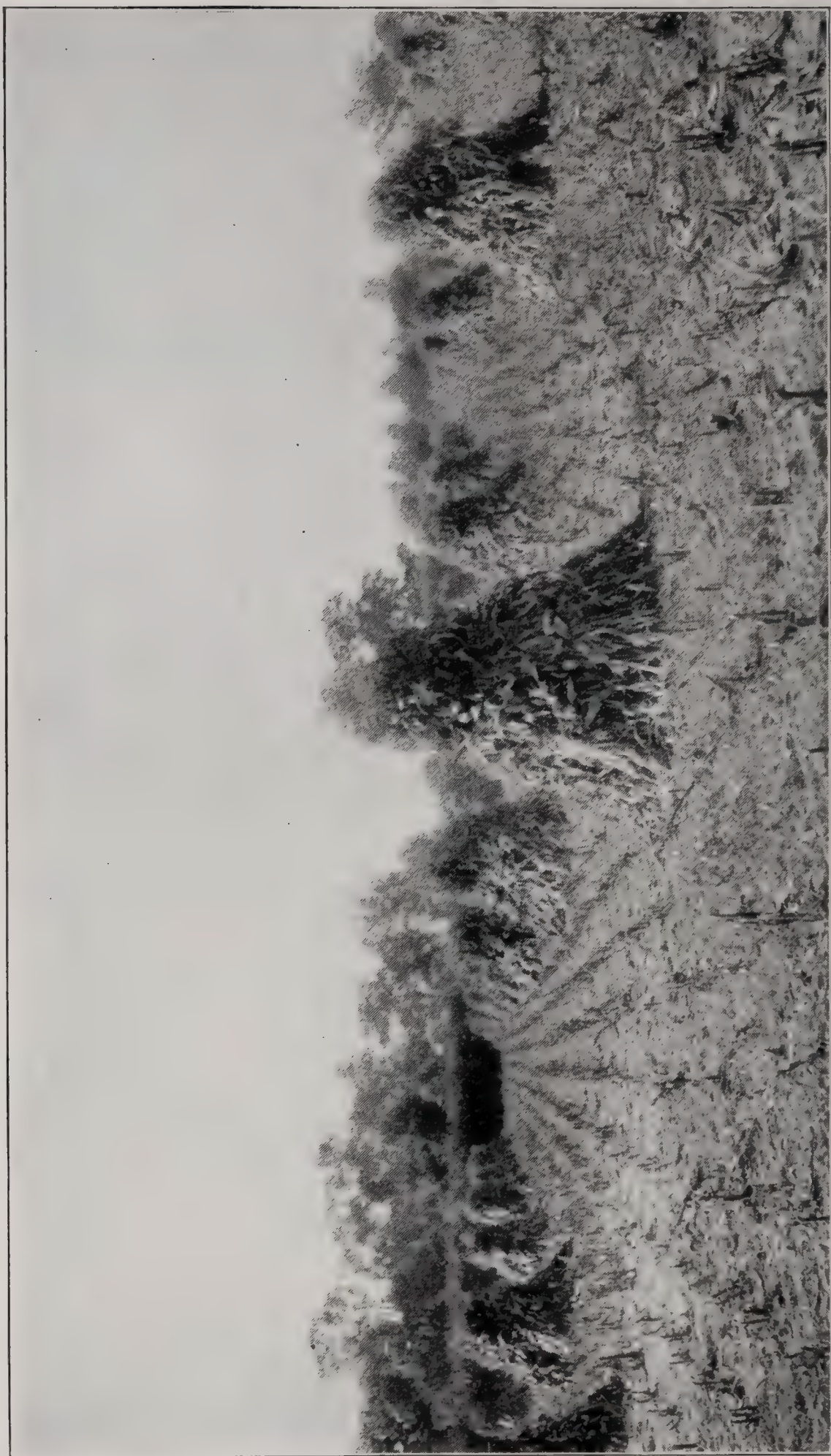
The usual amount is one bushel. On very rich land good crops have been obtained with even less.

How harvest the crop?

Harvesting should commence shortly after first grains ripen. A reaper is generally used, but if the grain is moderately high a self binder works well. The bundles may be set up two together and cure easily. As soon as the grain is thoroughly dry, thresh from the field.

Is the crop a profitable one?

It is rather uncertain as to yield, but one of the best catch crops, and when conditions are favorable will pay a fair profit. Yields range from fifteen to forty bushels per acre.



“The prosperity of the east, as a whole, would be greatly increased if the rotation of crops were so modified as to enlarge the corn acreage.”

CORN

"Aye the corn, the royal corn, within whose yellow heart there is health and strength for all the nations."

RICHARD J. OGLESBY

Would you advise the continuous use of a piece of land for corn or is it better to seed occasionally?

It is emphatically bad practice to grow corn continuously upon the same ground. The general system of a rotation of crops is sound.

Does it pay to raise corn for grain if the land will yield 50 bushels to an acre, instead of hay yielding one and a half tons to the acre?

The corn crop, under ordinary conditions, will pay best. Fifty bushels of corn will weigh 2,800 pounds which is almost as much as the hay, and the total digestible nutrients will be much greater. In addition to this, there will be a crop of stover probably equal in feeding value to the hay. Of course the cost of producing the corn crop will be much the greater.

Which is the proper time to plow for corn, in the spring or fall?

The answer to the question depends largely on local conditions, the press of other work and the character of the soil. Fall plowing has distinctive advantages in securing a good condition of friability on heavy clays. On the other hand, there are certain well-established disadvantages in leaving soils barren or bare all winter on lands which are inclined to wash or gully. In the more northern latitudes on clay lands, fall plowing is to be recommended, while further south it would be better to keep the land protected by some sort of a cover crop during the winter.

Should the ground be plowed deep for corn?

As a general rule we should all seek to plow deeper than we have in the past not only for corn but for other crops. There may be special soil conditions, however, to which this rule will not apply.



Is eight inches too deep to plow for corn?

Not under ordinary soil conditions; but on thin soils where eight inches would bring up the hard subsoil without vegetable matter, it would be disadvantageous. If we are to plow much deeper than ever before, it should be done by degrees.

Does it pay farmers to raise their own seed corn?

One thing which we ought to learn to do is to raise our own seed corn more generally than we do. If we can form the habit of carefully drying our corn before the coming of freezing weather, we shall get seed better than we can possibly hope to buy.

Which is better for seed corn, the whole or just the center of the ear?

The butt kernels are as good as any except for the fact that their large size and irregular shape prevent regular and exact work in planting. Some careful growers discard the butts for this reason. On the other hand, the tip kernels are objectionable because they are small in size, causing the resulting plants to have less nutrient stored up for them, hence they are feeble in their early growth. It is better to break off the tips.

How are sawdust boxes prepared for testing seed corn?

Sawdust is used in testing seed corn simply because it is a good, clean, lightweight absorbent that readily holds water. Take a box four inches deep, fill with sawdust to one and one-half inches from the top; saturate this sawdust with water and spread a white cloth over the top. Lay on this cloth the kernels of corn you wish to test, cover with a heavy pad of cloth and over this place a strip of oilcloth. Then put the box where it will have a temperature of from 70 to 80 degrees, and at the end of five or six days you should be able to roll back the cloth pad covering and count the kernels which have germinated, without disturbing them. It should be remembered that corn ought to germinate vigorously, and that feeble germination under these conditions is likely to mean no germination at all under the unfavorable conditions of the field. It is generally best to take 100 to 200 kernels from a thoroughly mixed bag of corn for the germination test. If you wish to do a first-class job, you may rule off the cloth in little squares about one inch each way

and then plant five of these kernels from each way. There is nothing in our agricultural experiments that, with little effort, will bring forth as large returns in money as will the more careful testing of our seed corn before planting.

What is the best time to plant field corn; silage corn?

Corn is a subtropical plant which grows best in warm weather. The best germinating temperature for corn is 93 degrees Fahrenheit, and the lesson is that corn should not be planted until the weather is settled and warm. This will vary in different years and localities, but in central New York will ordinarily be about May 20 to 25. Frequently June 1 is as early as it will be wise to plant. The above applies to both field and silage corn.



Cornfield in Western New York

Which is the better way to plant corn — in hills or drills, and why?

In New York State we have very generally fallen into the practice of planting corn in drills, especially for silos. Probably this is because it is the easy way rather than because it is the best. In cases where quack grass is bad, the planting of corn in hills gives a far better chance to combat it than when the drill system is used. In the Mississippi Valley, where so much corn is raised, the hill system is practically the only one used.

How many kernels should be planted per hill for the largest yield?

The number of kernels will vary widely with the distance apart of the hills and the size of the variety. Extensive experiments indicate that under Illinois conditions the largest yield of ripe grain is received from about 10,000 stalks per acre, while the greatest food value in ensilage was obtained from about 20,000. This means, roughly speaking, three stalks per hill for grain or six stalks per hill for ensilage when hills are three and one-half feet apart in each direction. These results are from dent corn; the small flint varieties may be put in somewhat thicker.

Would you recommend spreading manure on green sward and plowing under for corn?

This practice is widely followed, and is unobjectionable.

If manure is plowed under for corn, should lime be sown before the corn is planted or the following year just before the ground is seeded?

It has been found that lime is less essential for corn than for clover or alfalfa. However, it will be well to harrow in the lime before the corn is planted, and this system will insure proper conditions for the young clover seeding that is to follow the next year.

Which is better for corn, to plow manure under or top dress after plowing?

The consensus of opinion in New York State is that larger yields of corn will be secured by top dressing with manure rather than applying it under, especially if the soils are of a heavy clay character. However, if troubled with weeds like the yellow mustard, the difficulty will be aggravated by using manures as top dressing.

How much manure per acre should be used on fairly good soil that is to be planted to corn and seeded, when 125 pounds per acre of acid phosphate is used?

It is impossible to say how many loads of manure should be used per acre for corn. It is better to apply it widely than to put a very heavy application upon a small area leaving the rest of the farm unsupplied.

Will it pay to use lime with stable manure on muck loam and clay land? If so, how much lime per acre should be applied, the crop to be corn followed by oats and seeded down?

On very many of our soils it pays to use lime with stable manures. The loam muck soils are those in which lime is very

frequently deficient, but the lime should not be mixed with the manure. There will be little loss if they are put on the land at about the same time and at once mixed with the soil.

Does it pay to use commercial fertilizers for corn on good river land if stable manure has been plowed under?

It frequently pays to use commercial fertilizers on corn in connection with stable manures. This is especially true of the use of phosphoric acid because this is the element in which our stable manures is most frequently deficient. If the land is somewhat cold, a little nitrate of soda will help to start the corn.

What will encourage the growth of ears of corn where stalks grow from eight to fifteen feet high?

Occasionally complaints are made of low muck soils which grow large stalks of corn but fail to produce good ears. Such soils are nearly always excessively rich in nitrogen but deficient in phosphoric acid and potash. The best applications would be dissolved acid rock and muriate of potash, but some experimental work should be done to find what is needed before too much money is invested in these chemicals.

Would you advise putting commercial fertilizer on corn after it has sprouted?

It is much better, as a rule, to have the commercial fertilizer harrowed in at the time the crop is planted, rather than applied on the surface. It is necessary that it should be put deep enough into the soil so that there may be water available to dissolve it. Nitrate of soda, however, is one of the materials which may be used as a top dressing and which, on account of its extreme solubility, will nearly always be dissolved and carried into the soil. If more fertility is needed after the corn has started to grow, it will be wise to apply and cultivate into the soil.

What grade of fertilizer would you advise using on an old pasture with heavy clay soil that is to be planted in corn this year, when about five loads of manure to the acre is used?

It is impossible to advise a specific fertilizer formula for the growing of any crop, unless we have definite data regarding the character of the soil, and experimental evidence as to

what elements of fertility are needed. In a general way, phosphorus has proved especially useful on New York State soils, and, if this land is rather thin old pasture, we have every reason to expect that a little nitrate of soda would give profitable results. Of course, where heavy dressings of farm manures are used there is less necessity for purchasing nitrates than where the manure is not available.

What is the best way to phosphate corn in hills where it is sown both ways?

We are gradually deviating from the old idea of applying either commercial fertilizers or manure in a little heap under or over the hill of corn. Personally, I prefer to broadcast my fertilizer with a drill, harrowing it in before the corn is planted, because long before the corn is mature its roots will have met across the rows and no matter where the fertilizer is applied it will be available to the plant. In other words, the widest possible distribution of fertilizer material is the ideal.

Is level cultivation better than hilling for corn?

Under ordinary conditions use level cultivation. There is no good reason why corn should grow better with a heap of dirt around it.

Do the majority of farmers cultivate corn and beans once or twice in a row, and if twice, why?

It has been said that we should cultivate at least twice as much as we thought there was any possible use of and then we would have it cultivated about half enough. Frequent shallow cultivations are the salvation of corn and beans in dry seasons.

What is the best catch crop to sow in corn?

Under New York State conditions the two most promising catch crops to sow in corn are rape and rye. However, where corn grows very stout the growth of cover crops will be small because the corn will take the sunlight and water. Also, our freezing weather comes on so quickly after the harvesting of the corn that the growing of cover crops in the corn has no such possibilities here as in the states lying south of us.

Does it lessen the feeding value of corn fodder if cut, shocked and cured in the field?

It is impossible to preserve corn fodder either in the shock or in the silo without some loss of food value. Experiments have shown, however, that the loss in field curing is greater than the loss in the silo. The loss in field curing results from the blowing away of some of the finer portions of the fodder, from the bleaching out of the soluble matter by the rains and from the slight decay which takes place in all parts of the stalk.

Is it well to leave corn fodder in the field and draw it to the barn as needed?

If you have no silo, the next best thing is to cure the corn fodder and get it under shelter rather than leave it in the field. Take care, however, not to store it in such large amounts that it heats or molds.

Is ripe green corn worth as much for feeding as dry crib corn; if not, what is the difference?

If the green corn is ripe, it will be worth a little more for feeding than the same corn after it is dried, because drying brings about changes which make it slightly less digestible; however, there is not very much difference.

SILOS AND SILAGE

Would you advise a dairyman to have a silo?

I certainly should advise a silo if the owner of the cows is a poor man and needs to keep his cows as economically as possible. With the silo a man can provide succulent food in the winter and utilize all his corn product at its best, 50 per cent. of the food value of the stalk being below the ear, which is wasted when fed dry. There is no way in which the entire corn crop can be put before the cows as economically as through the silo.

What kind of silo can be built the cheapest and also be air-tight and durable?

The stave silo is the cheapest, but the concrete silo is the most durable; this considered would surely balance the increased cost.

What kind of a silo would you advise putting up?

A well-made concrete silo will be the most satisfactory in the long run, and in localities where good clean gravel or crushed stone can be readily secured, the initial cost will be no greater.



A Practical Concrete Silo

What kind of a silo is best if a man has his own lumber? Would it be better to sell the lumber and buy a silo ready to set up?

If a man has his own lumber and is close to a planing mill which has had some experience in doing this class of work, he will do well to saw his own lumber into two-inch planks, have it dressed, tongued and grooved and then set up his own silo. It will be a substantial saving from the plan of selling his lumber and buying a silo ready to set up.

In building a round or tub silo would you advise matching staves?

It is certainly better in building a stave silo to have the staves tongued and grooved, or else both staves grooved with a wooden spline inserted.

Would it pay to build the bottom eight or ten feet of a silo out of grout wall?

It is very probable that it would be wise to build the lower portion of a wooden silo out of grout wall, as the wooden silo will be especially liable to decay if it is set deep in the ground. One precaution to be observed is that the diameter of the grout portion and the wooden portion are the same. If the lower portion is smaller, it will prevent the proper settling of the contents, and if the lower portion should be larger, it would leave air pockets when settling occurred and bring about serious loss.

Is it advisable to construct a concrete silo if gravel and sand can be obtained at 50 cents a two-horse wagon load?

Yes, if the sand and gravel does not have to be hauled too long a distance.

Are solid cement silos — that is, not made in blocks — a success?

The so-called monolithic or solid concrete silo has proved entirely satisfactory in very many cases. The only thing that can be said against it is that in very severe climates it may tend to freeze more than if it had a dead-air space.

How thick should the wall of a stone silo be built? Would concrete be cheaper than stone? Are either of these better than stave?

The silo laid up of stone will be less satisfactory than the grout or concrete silo. So far as the quality of the silage is concerned, the well-built stave silo is entirely satisfactory. The great claim to be made for the concrete silo is that it is absolutely permanent and in many cases can be built as cheaply as a wooden structure.

What is best for plastering silos?

For a concrete silo, whitewash of clear Portland cement and water. Give two or three coats.

What application can be used on a stone silo to fill imperfect joints?

A good asphalt roofing paint would be satisfactory for this purpose.

What is your opinion of silos made of hard, burned, hollow blocks, the material of which the Iowa silos are made, and where may these blocks be obtained?

Hollow, burned tile certainly make handsome, durable, serviceable silos. They are advertised by the manufacturers.

How large would you build a silo for five or six cows?

Five or six cows is as small a number as we would think of building a silo for, and however small its diameter, a silo should at least have a depth of twenty feet if it is to be fed out of during the entire winter season. If we provide for a storage capacity of five tons of silage for each cow it will insure an ample supply for the usual feeding period and perhaps a little over for midsummer use. A silo 24 feet high and 10 feet in diameter, if well filled, should hold not far from 30 tons and will be suitable for the size of herd mentioned.

How large should a square silo be built to provide for ten cows for one year?

A square silo should not be constructed unless there is some special reason for not building a round one. If a silo is 30 feet deep it will hold about forty pounds of silage for each cubic foot of capacity, provided the silage is well settled. A round silo has about 78 per cent. of the capacity of a square one with sides equal to the diameter of the round silo. We should provide at least fifty tons of silage for the winter feeding of ten cows.

Would you advise building two silos for 30 head of stock, or would one large one be better?

It would depend upon whether or not the thirty head were stabled so as to conveniently be fed from one silo, and also upon the question as to whether it is expected to use silage for summer feeding. It is always much cheaper to build one large silo than to build two small ones of equally combined capacity. On the

other hand, if stables are on opposite sides of the barn it is sometimes difficult to arrange one silo to feed all the animals without carrying silage too great a distance. Furthermore, for summer feeding it is desirable to have a silo of rather small diameter because during hot weather silage rapidly spoils unless from one to two inches of surface can be removed each day.

Should bulk or quality be the chief aim of the dairyman in securing silage?

We should always seek for ensilage of the highest quality, and this can be secured only by using corn of the type early enough to become thoroughly matured before frost, and planting thin enough to make a fair amount of ears. It is a serious mistake to sow the large varieties of southern corn which give a great amount of gross weight per acre, as this weight is made up mainly of air, coloring matter and fiber.

Does the common yellow field corn make better ensilage than Pride of the North?

The silage made from our yellow state corn will contain a considerably larger proportion of grain than if made from dent corn. However, the dent corn will give a larger tonnage per acre and, if it is well matured, will contain as much grain as the animal can use to the best advantage.

Can we derive more profit from an acre of ensilage corn than from state corn?

Experimental work at various stations has shown that it is possible to grow a somewhat larger amount of nutrients per acre from our varieties of dent corn than from the small state corn. The safe rule is this,—grow the largest variety of corn which will become reasonably mature in your locality, and for most of New York State there are no better varieties than Pride of the North and Leaming.

How many quarts of Leaming corn should be sown to the acre, rows 35 inches apart, for ensilage?

Six quarts of Leaming corn per acre would be sufficient if every kernel grew and came to maturity. However, there are so many losses from poor seed and insect and bird enemies that twelve quarts per acre has come to be a more general recommendation in New York State.

Other things being equal, how much more land will it take to produce corn to fill a 12 by 24-foot silo when planted three feet each way than when drilled in rows 35 inches apart?

There is no reason why it is not possible to grow just as much corn in hills three feet apart each way as in drills. The only objection to the hill system is that, ordinarily, it is more troublesome to plant the corn and it takes more cultivating. On the other hand, it is possible to more successfully kill the weeds when planted in hills than in drills.

Should corn be green or partly cured when put into the silo?

If corn is too immature it will make better silage if it is wilted or partially cured before putting into the silo. On the other hand, if badly frosted or too ripe, it may be necessary to spray water upon it for best results. However, if the conditions are right so far as maturity is concerned, there will never be better silage than to take it from the field to the silo shortly after it is cut.

Does corn that is glazed at cutting lose any of its feeding value by going through the silo?

It is true that corn loses a certain small percentage of its value even under the most favorable conditions in being siloed. This loss may be larger than we commonly suppose. At the Wisconsin Station very careful demonstrations showed losses of dry matter in siloing ranging from as little as 2.1 per cent. near the bottom of a well-packed silo up to 32.5 per cent. in a surface layer of material where the air had access and fermentation ran very high. Still we feel sure that the loss in siloing is less than the loss in the best field curing.

When silo corn is well eared, should all the ears be put in the silo or part of them picked off?

If corn is heavily eared there is sometimes a larger proportion of grain than can be utilized by the animal to the best advantage. Under these conditions, if time permits, it may be wise to pick off some of the ears before putting into the silo. At the same time it may be said that the men who have used silage the longest rarely do anything of this kind.

Will cornstalks be good for ensilage after the corn is husked?

Corn stover will make fair silage provided enough water is added to it to make it ferment vigorously and is packed closely

enough to exclude the air. It is doubtful, however, if this plan is to be recommended for general practice.

To what extent is ensilage corn injured by frost if cut into the silo soon after the frost occurs?

Corn is not especially injured by frost if cut into the silo immediately afterward, but frosted corn standing in the field rapidly deteriorates in value. If corn is badly frozen, cut down into bunches at once and get into the silo as quickly as possible.

Is it best to put corn in silo at once after cutting it in field?

If corn is at the proper degree of maturity, it cannot go to the silo too quickly after being cut down.

What is the value of immature corn as compared with corn well glazed for the silo?

One of the most serious errors made is the siloing of corn while it is too immature. There is no period in the entire life of the corn plant when it is taking in nutriment out of the air and out of the soil as rapidly as during the two weeks preceding full maturity. Corn should be put into the silo about the time some of the ears are dented and the lower two or three pairs of leaves are turning yellow; these being the signs of maturity in the corn plant. On the other hand, we should not make the error of letting it become fully ripe before siloing because in that case there is a loss in palatability and digestibility, and some of the corn gets so hard and flinty that it is not so well masticated or digested. At the Experiment Station some years ago a study was made of the dry matter contained in the corn crop at various stages of its growth, beginning when it was tasseled on July 30 until fully mature on September 23. The following table shows the result of this experiment:

	Tasseled July 30 Lbs.	Silked Aug. 9 Lbs.	Milk Aug. 21 Lbs.	Glazed Sept. 7 Lbs.	Ripe Sept. 23 Lbs.
Weight of green corn.....	18,045	25,745	32,600	32,295	28,460
Dry matter in same.....	1,619	3,078	4,643	7,202	7,918

What variety and amount of soy beans per acre should be planted with corn for silage? Do soy beans alone make good silage?

There are a few farmers in the state who report quite satisfactory success with them. In any case one of the earlier varieties should be used in New York State; the Medium Green gives good results. Soy beans alone do not make very good

silage; the combination commonly recommended being, two parts corn and one part beans.

Is it advisable to sow sunflowers with corn to add protein to the silage?

Some years ago it was believed to be very advantageous to sow sunflowers with corn for silage. It is true that the seed of the sunflower is rich in oil and protein, but, on the other hand, the remainder of the plant is of low-grade value and palatability, and apparently the practice has nothing to recommend it.

Can alfalfa be put into a silo green with successful results?

It is entirely feasible to put alfalfa in the silo with excellent results, and many farmers are following this plan with the third crop which matures late in the season when weather conditions are unfavorable for air drying.

What have been the results of filling silos with small crops like oats, peas, clover, rye, etc., put in whole?

As a rule it is best to make our small hay plants into hay rather than silage, although almost every plant grown on the farm has from time to time been siloed with at least fair success. Hollow-stemmed plants do not keep as well as do the solid stalks of the corn. There is also a different ferment from nitrogenous plants. Pea vines near the canning factories are generally converted into silage which has an unpleasant odor, but which cows consume greedily, and their voidings give first-class results. However, it still remains that corn is preeminently the silage plant.

Which in a three-year rotation plan will be the more profitable to a farmer having a piece of land that will grow corn enough to fill a 14 by 30-foot silo,—to plant corn or alfalfa, the same land being adaptable to both?

Corn and alfalfa are equally useful plants on the dairy farm, and neither of them should ordinarily be discarded. After a crop of alfalfa, corn will grow better than ever before, and every effort should be made to retain both of them.

Would you advise filling a silo for use during July, August and September?

There is surely no agricultural practice which is more worthy of following than this. The silo filled with well-eared, well-matured silage during autumn for use the next July and August is the happiest solution of the short-pasturage problem.

Which is the better for ensilage, the blower or carrier? It is said that in using the blower the kernel is torn off and the action of the acid causes it to disappear, so that when the ensilage is taken out, no kernels can be seen.

The blower is preferable to the slat carrier for filling silos because it secures a more uniform mixture of the leaves and the heavier parts of the stalk and the grain; also it cuts the material more finely than the old style cutters, which in itself is an advantage because the silage settles more closely, thereby excluding the air and giving less opportunity for fermentation, which always means a loss of food value. The blower will require at least one-third more power than the slat carrier.

Can ensilage be trodden too much when put into a silo?

The more thoroughly silage can be trodden and compressed — thus expelling and excluding the air — the better it will be for the resulting product.

Should the top of the silo be wet after it is filled?

A thorough wetting of the top of the silo after filling will certainly tend to seal over the surface and decrease the necessary loss. There is no more satisfactory way of covering a silo than to begin to feed out of it the day you fill it. If this is not done, there will, of course, be some loss and we should try to cover it with some material of low value, such as corn from which the ears have been picked, buckwheat straw or sawdust.

How many pounds of ensilage are in a cubic foot in the lower half of a silo 14 x 28 feet?

Professor King of the Experiment Station of the University of Wisconsin, found that two days after filling, a cubic foot of silage, at the depth of ten feet, weighed 33.1 pounds, at twenty feet, 46.2 pounds and at thirty feet, 56.4 pounds. In a silo 30 feet deep, when well filled, the average weight per cubic foot will be not far from 40 pounds.

What amount of silage should be fed at one feeding and when should it be fed — before or after milking?

Good silage may be fed very freely. If roughage is scarce, silage may almost entirely take the place of hay, although ordinarily this is not to be recommended. A big cow will probably use 50 pounds of silage per day in her ration. It is better to feed it just after, rather than just before milking, as, if there

is any tendency toward a slight silage taint in the milk, which sometimes happens, this will be remedied by feeding after milking instead of before.

What causes silage to mold?

Silage is most apt to mold if it is too dry or insufficiently packed, or if the leaves and lighter parts of the stalk are not mixed with the heavier portions. The theory of siloing corn depends upon the fact that the fermentation and high temperatures which result immediately after cutting bring about the death of the bacterial and fungous life, and in consequence, after this first fermentation has run its course, no further change results. If, on the other hand, the corn is so loosely packed that the air is permitted to enter we have mold and other troubles.

What is the cause of the acid in silage?

The acid of ensilage is mainly acetic, which is a decomposition product of sugar. It represents a loss of nutrient value because it is of no direct value for food. Its presence is simply one of the things that we cannot avoid.

What is the value of good corn silage per ton compared with hay at \$12 to \$15 per ton?

If well-matured and well-eared, three tons of ensilage should be equal to a ton of timothy hay. If cut rather green, however, it will contain so much water that it may take four tons to



have the same value. The ensilage has the great advantage over hay, however, that it is very much more pala-

table, and hence has a value higher than the mere analysis would indicate.

What percentage of sugar, also protein, is lost when corn is put into silage?

The loss of sugar may be considerable, some of the sugar being converted into acetic acid, which has no nutritive value. Very little protein is actually destroyed, but the digestibility of protein is increased by the heating which takes place in the silo.

Does silage carried over the summer lose much of its feeding value, provided, of course, the silo is well constructed and air-tight?

Silage will keep into the second summer almost without loss in a good tight silo. Very little change takes place after the first fermentation has run its course.

Is there alcohol in ensilage, and if so will it affect the milk?

At certain stages of silo fermentation there may be present exceedingly minute quantities of alcohol, but its presence is of no particular importance.

Will silage, properly stored and fed, render milk unsanitary?

The very highest grade certified milk establishments are feeding silage, and there is no possible reason why the feeding of properly made and preserved silage should be detrimental in any way to the milk supply.

What effect does ensilage have on cows' teeth?

There is no possible foundation for the belief that silage injuriously affects cows in any way.

Some farmers claim that silage shortens the life of a cow. If this is true, what is the cause?

There is no possible evidence to prove that the feeding of good silage has any unfavorable effect whatever upon the health of the cow.

SOY BEANS

"Soy beans have become an important crop in only a few localities in the United States, but in cases where farmers have learned to utilize them to best advantage they have proved to be a crop of high value."

B. T. GALLOWAY

Can soy beans be grown profitably in New York State? Give general directions for growing, also proper time for harvesting.

Soy beans can be grown profitably in some parts of New York State. They are unadapted to poor soil and high altitudes; the best crops being grown on strong limestone soil in locations favorable to corn. To produce fodder, sow one and one-half or two bushels of seed an acre in drill rows 28 or 30 inches apart and cultivate as for field beans. For producing seed, sow from one-half to one bushel of seed an acre and give the same kind of cultivation.

The time to harvest for hay or silage is when the beans are beginning to mature or when the foliage is still on the plant.

For seed, harvest the stalks when the foliage has fallen or is beginning to fall. Use a side-delivery reaper, twine binder or mowing machine for harvesting the crop.

What variety of soy beans is best adapted to New York State for hay and silage?

The Medium Green variety has been found to be best adapted for fodder purposes in New York State. There may be other varieties as good, but they are not so well known. This variety comes to a reasonable degree of maturity and will grow from two and one-half to four feet high, and produces an abundance of foliage which remains on the plant late in the season.

Are soy beans a good crop to raise to feed green or ripe?

Soy beans make a good soiling crop for cattle. If allowed to ripen, sheep can eat the ripened plants and swine will do their own threshing of the ripe beans. For dairy cattle, the best place for the crop is in the silo mixed with corn.

Is inoculation necessary?

Where they never have been grown before it is best to inoculate the seed, so that their nitrogen-gathering qualities may be fully used.

Would soy beans when planted with corn be injured by the use of a weeder?

A weeder can be used when the soy bean plants are above ground and when the sun is hot and the stems of the plants are somewhat toughened by partial wilting.

If soy beans are allowed to stand until the beans are ripe, will the hay be of much value to feed?

Some varieties of soy beans lose their foliage when ripe. If hay is wanted it is best to cut the crop when the pods are par-



A Field of Soy Beans

tially formed. After threshing ripe beans from the fodder, the remaining stems will not be palatable.

How does soy bean hay compare in nutritive value with alfalfa hay, assuming that both are cut at the proper time and properly cured?

Soy bean hay is almost equal to alfalfa hay in nutritive value according to analyses of its composition.

How should soy beans be harvested?

The chief value of soy beans as a crop is in the beans. They will analyze nearly as high as cottonseed meal and on good land yield as high as thirty bushels per acre. The forage is very coarse and of comparatively little value when the beans have matured; in fact as forage it is very much inferior, because of the coarse stalk, to the southern cow pea, with which it has many points of similarity. The beans should be handled very much the same as the common bean. They may be allowed to come to maturity, and if no bean harvester is at hand, pulled and placed on little piles to dry; then removed to the barn and threshed either by suitable machine or flail.

POTATOES

"Next to bread and meat, the most important article of food to the Anglo-Saxon race is the potato."

E. H. GRUBB

Is there any profit in potato raising?

Yes. On soil naturally adapted to the potato, where the crop is grown according to the laws of this plant, and insect diseases are combatted, it is one of the most profitable. This is evidenced by the many men who have paid for their farms chiefly through this crop.

What is the average cost of raising a bushel of potatoes?

This depends materially on the yield, the locality and the labor-saving devices employed. On Long Island, where at least a half ton per acre (often more) of high-grade fertilizer must be used, the cost would be materially greater than in sections of the state where the condition of the soil is such that little or no purchased fertilizer is necessary. On the other hand, with large areas where potato planters and diggers can be employed, the labor cost is materially reduced. All things taken together, at present prices the average cost of raising a bushel of potatoes would not be much less than twenty-five cents.

Is there any money in potatoes at 25 cents per bushel when a man is paid \$25 and board to raise them?

The average cost of producing a bushel of potatoes will doubtless be about twenty-five cents with an ordinary yield. If the yield is greater or if the cost of labor or processes involved can be reduced, it may be less. The amount paid a man for this work depends altogether on the character of the man and his efficiency and how intelligently his work was applied.

What is the best soil for raising potatoes?

An ideal potato soil is one that is warm, deep, rather light and rich in vegetable matter.

Is it advisable to put potatoes on the same piece of ground three successive years?

It is not advisable to put potatoes on the same land more than once. First, because the plant food available for potatoes has been heavily drawn on by the previous crop. Second, because any slight contamination from disease will be much more likely to affect the second planting; and the beetles will be already in the ground to attack the young plants at their first appearance.

Is the Washington potato as profitable as any other kind?

It is a good variety in most localities.

Do you consider it advisable to cross-plow sod in the spring that has been top dressed and plowed in the fall for potatoes?

The extra plowing will make the soil very much more mellow, and it is practiced by many. The principle of leaving the ground bare is not a correct one. Much better on suitable potato ground to allow the sod to remain, cut up with the disk and plow in the spring.

Suggest a good rotation for a person growing potatoes as the principal crop.

Wheat, clover, potatoes; or, wheat, clover, potatoes, corn.

How would it do to plow the land after the hay is cut, sow rye and plow again next spring for potatoes?

The principle of the plan suggested is excellent and in most cases would pay for the extra labor and expense involved. By



There is a Demand for Potatoes of Good Quality

this process the sod would decay and be in shape to feed the potatoes at once, the extra tillage would improve the texture of

the soil, the rye would act as a cover crop to hold the plant food, and, turned under in the spring, would afford some humus and also tend to make the soil slightly acid, which is detrimental to the development of the potato scab.

What time of year should potatoes be planted, and what kind of soil is best?

From March 20 to July 1, according to locality. They can be planted much later and produce good crops. The quality will be better if they have time to mature; the late-planted potatoes are often of poor quality.

About how many bushels of potatoes should be planted to the acre?

When planted one and one-half by three feet, about eleven bushels would be required to plant an acre.

Does the seed ball produce better potatoes than the tuber?

The true seed of the potato is that coming from the ball at the top. But planted it will produce at the outset only a number of marble-like potatoes, varying materially in their shape and general characteristics. The best of these can be replanted and from them selections made. This is the way that new varieties are started. The potato has been so long propagated from the tuber — which is not a seed — that comparatively few of the balls are now found.

What is the advantage of planting potatoes whole?

The largest yields on test plots have been obtained from whole tubers, but unless seed is very low in price this is altogether too expensive. A potato too small to cut is too small to plant.

Is it well to use small potatoes for seed?

While it is true that many excellent crops of potatoes are grown from small seed, the principle is wrong. If the potato is simply small — one from a large, thrifty hill — it is probably just as good seed as any; better than a large tuber coming from a hill of which it was the only occupant. But as they are generally used, the majority of them will have come from hills in which the tubers were all small; hence considered degenerate seed. With these potatoes, even if cut, there will be more eyes than are necessary, with comparatively little flesh to sustain

them; hence there will be less vigor in the plant than where a larger tuber with more flesh about the eye is used.

Give a good method of handling seed potatoes from the time they begin to sprout until planting time.

Many potatoes to-day are being held in cold storage and brought out in the spring after danger of frost is past. Where the soil is porous an excellent plan is to dig a pit about eighteen inches deep, three and one-half to four feet wide and long enough to contain all the seed necessary, having the apex of the pile not higher than four feet from the bottom. Place the tubers in this and cover them with bran sacks, six to eight inches of straight straw and four or five inches of earth. Just before the ground freezes, cover with another coat of straw and six or eight inches of earth. This will keep the potatoes from the frost, and in the early spring also keep them cool. As the weather warms up the first covering may be removed.

Would it be advisable to change seed potatoes with my neighbor, he living on low and I on high land?

The exchange of seed potatoes has been a very popular notion. Practically there is very little in it, except that tubers coming from the North usually contain greater vitality than others. There would be little advantage in simply changing with one's neighbor even from low to high land. To-day the best seed is obtained from one's own farm by planting selected tubers, true to type from vigorous hills, in a portion of the field by themselves. At digging time reject all hills that lack vigor, with too small a number of tubers to be profitable, and those undersized or irregular in shape. From the selected ones left save the seed. This practice alone, followed for a succession of years, has in many instances increased the yield 25 per cent. If the neighbor's stock is better, it might be a good foundation.

How should potatoes be cut for seed, and how many pieces?

Just how many eyes to cut in a piece must be determined by the character of the potato and also by the condition of the ground in which the pieces are planted. One of the Early Rose type, for instance, having many eyes would have less flesh about

each eye to sustain it than one of the Rural type with few eyes and much flesh. When the soil is very mellow and with plenty of available plant food, rootlets from the seed piece will find congenial surroundings and grow much more rapidly than where the soil is hard and sterile. Where conditions are right two good eyes are planted.

It is wise when planting by hand to cut the potato from the seed end down, so that the piece may contain eyes from both portions. Where machines are used this form of seed piece will not work as well as one of less length. The eye from the stem end will be the stronger, but that from the seed end will sprout more quickly.

How long should potatoes be cut before planting, and why?

If potatoes are cut some time before planting they are likely to dry out and hence fail to sprout, therefore it is advisable to cut shortly before planting. If it is desirable that this work should be done a few days previous, sprinkling the cut surface with land plaster or sulphur will in a measure prevent this drying. They should not be placed in large piles or closed barrels after cutting, or often they will heat.

In planting potatoes three feet apart each way should more than one piece be put in a hill?

It would be wiser to plant closer together. While it is true that two pieces in the hill are more likely to give a satisfactory stand than one, it materially increases the cost of the seed — very much more than any advantage gained. When the tubers are cut too small there is not flesh enough about the eye to sustain them until they can get their sustenance from the soil.

Is it a good plan to take potatoes out of the cellar as soon as all danger of freezing is over?

Yes. If the potatoes can be spread in a light, dry place where there is no danger of frost they will not be so likely to send out a sprout which, when broken off, affects the vitality of the seed; and the sprouts starting will be very much stronger.

Which side up should a cut piece of potato be planted?

It is better to put the cut portion of the potato toward the earth. Practically, to do this in every case involves too much labor.

Does it injure a potato for seed to be sunburned?

No. A potato that is sunburned will sprout more readily than one not so affected. Where late planting is practiced, many of the best growers spread their seed out in the open in order that they may be greened by the sun.

Is there any such thing as potatoes turning yellow and appearing sunburned by having the cellar too light?

Yes. This condition may obtain in a cellar and would be injurious to potatoes intended for consumption, but, as answered in previous questions, is really a benefit for seed.

Would a potato affected with dry rot be good for seed?

No tuber containing any form of rot should ever be planted. It may cause the rotting of the seed piece or implant spores of decay that will injure the crop later.

What is the best way to plant potatoes, in rows or checks?

Drills rather than checks give the largest yields. More hills can be put on an acre and there is less disturbance of the root system where they are only worked one way than where they are in checks. If the land is very foul, this system involves more difficulty in keeping them clean than where they are in checks and can be cultivated both ways. In such cases it is usually wise to check.

When potatoes are planted in hills, how far apart each way should they be?

In carefully conducted experiments, 2 feet 6 inches by 2 feet 9 inches, depending on the variety, has given the largest yields.

Should potatoes be planted four or five inches deep on low or moist ground?

One of the laws of the potato is coolness and moisture. If planted near the surface they have heat and dryness, and in order to overcome this the soil must be taken from the center of the rows and ridged up, often destroying root growth. On very low or moist land (on which it is not usually wise to plant potatoes) a more shallow planting and ridging would doubtless help to overcome the difficulty.

What would be the best method of getting potatoes in the ground four inches deep without using a planter?

A good one-horse plow or up-to-date marker will without difficulty make a furrow four inches deep; in fact it is easier to put them in this depth without than with the planter.

What do you think about rolling potatoes after they are planted?

There would be very little advantage unless the ground is very dry, but it is a very desirable thing to do after plowing, particularly if the land is dry or a sod. It tends to compact the sod, hastens decay and establishes a union between the bottom of the furrow and the subsoil. Then thoroughly fit and make mellow the soil.

At what stage in growing potatoes should cultivation cease?

If the cultivation has not been stopped, that near the surface or one or two inches deep may be continued almost indefinitely with advantage to the crop, unless the vines so thoroughly cover the ground that they would be disturbed, and by shading it make subsequent cultivation unnecessary. If the cultivation has been stopped and after a period is resumed at all deep, it will induce a new growth and the potatoes will likely be stubby.

What is lacking in the soil when the potatoes are mostly tops?

It may be due to degeneracy; possibly too much nitrogen. Try potash and phosphoric acid.

What grade of fertilizer is best for potatoes? Give the analysis.

This depends very largely on the nature of the soil. If one needs all three elements, a fertilizer containing 4 per cent. of nitrogen, 10 per cent. of phosphoric acid and 5 per cent. of potash will usually be found excellent. It is important to know what portion of this nitrogen comes from nitrates, such as nitrate of soda, which is immediately available, and what portion from organic nitrogen, which is not available until late in the season. Where the fertilizer is depended upon to grow the crop and all is applied at one time, half should come from each of these sources. If the soil is full of organic matter and stable manure has been applied, probably a fertilizer with 12 per cent. of phosphoric acid and 5 per cent. of potash will be better. Such a fertilizer can be made from nine parts of treated South Carolina rock and one of muriate of potash.

Would it be profitable to use 200 pounds of sulphate of potash in connection with stable manure?

Two hundred pounds of sulphate of potash will contain from forty-six to forty-eight pounds of actual potash, which would

be a liberal application for two acres of ground. Just how much manure one should put with it would depend entirely on the character of the manure and of the soil. Where the liquid is all saved the manure contains at least eight pounds of potash to the ton. The muriate is better than the sulphate, because it is cheaper and also it will not injure the flavor of the tuber. But it is very certain that phosphoric acid is as much needed for the potato plant as potash, and the addition of nine times the weight of treated South Carolina rock to one of potash would materially improve the fertilizer.

Is it profitable to use one-half ton of commercial fertilizer per acre for potatoes?

It would usually give an increased yield on the average soil. On soil rich in organic matter it would be questionable.

Would the sowing of fertilizer for potatoes (on light land) three or four weeks before planting be as well or better than at the time of planting?

There would be no possible advantage in sowing the fertilizer in this way and there might be many disadvantages. The phosphoric acid, if the weather was dry, would tend to lock up. If the nitrogen was from nitrate, much of it would probably leach away; if from an organic source, there would not be much advantage as this would not become available until it had decomposed, and this takes place only after the ground is warm.

What is the best way to use commercial fertilizer for potatoes, in the furrow or after the potatoes are up?

An amount of fertilizer not to exceed 500 pounds would better be put in the furrow before planting and mixed with the soil. If depending wholly on the fertilizer to grow the crop and getting all the nitrogen from nitrate of soda — which is the most economical source, both because of first cost and from the fact that less is lost in transmission to the plant — it is an excellent plan to make a second application after the potatoes are six or eight inches high, using a grain drill with the pipe immediately over the row stopped. This will cheaply and uniformly distribute the fertilizer where the roots of the plant extend.

How much fertilizer will it be safe to put in with a planter for potatoes?

Many growers are using as much and more than a ton to the acre, put in with the planter at the time of planting potatoes, and with no injurious effect, so long as the fertilizer is thoroughly mixed with the soil and does not come in close contact with the tubers. Whether it is profitable to use so much is a doubtful question. Mr. F. A. Sirrine's carefully conducted experiments on Long Island showed that while larger yields were obtained with the larger amount, the most profitable quantity was a half ton to the acre; this at ordinarily good prices. The extreme prices that obtained for the year 1911 would change these results; but such prices are exceptional.

How should commercial fertilizer be applied to potatoes if planted by hand?

A very good way to apply fertilizer to potatoes when planted by hand, where the amount is not to exceed 500 pounds per acre, is to use a grain drill, stopping all the tubes except those that go in the row. This will distribute the fertilizer evenly and mix it with the soil all in one operation. If a larger amount is to be used and applied at one time, all the tubes may be allowed to run the fertilizer.

Will it pay to sow fertilizer broadcast and harrow it in on land that will yield 125 bushels without fertilizing?

All experiments have shown that unless an extremely large amount was used most profit was obtained by placing the fertilizer in the hill rather than sowing it broadcast on the land. While 125 bushels is a fair yield, it is presumable that the use of a moderate amount of fertilizer would materially increase it. The only expense would be the fertilizer and the little labor of applying it. Use of land and all other labor except picking up and carting away the extra potatoes would be the same.

What form of potash is best for potatoes?

While it has been frequently stated that sulphate is the best form of potash to use for potatoes because of the supposed injurious effect of the chlorine in the muriate, this belief is without foundation, as demonstrated by actual test of the potatoes themselves. Because the muriate is fully as rich in potash and can be purchased at from three to four dollars a ton less than the sulphate, it is to be preferred.

Should potash be used alone or mixed with other fertilizers for potatoes?

While potash is a needed fertilizer for potatoes, there are but few cases where phosphoric acid is not equally important. Nitrogen may or may not be necessary in the fertilizer. This will depend on how much is in the soil from other sources. An excess will tend to too great a growth of vines at the expense of tubers later.

Should we apply commercial fertilizer on sod for potatoes?

While it is true that sod will retain more moisture, and in its decay furnish some plant food and also help make available plant food in the soil, the total amount obtained by this process will scarcely be enough from the sod alone to furnish all available fertility that the potato requires. Hence it would be wise to apply some fertilizer.

Does the use of commercial phosphate in growing potatoes tend to make the potatoes keep better, that is, freer from rot?

There is nothing in the manure itself which would cause potatoes to rot, but it is an excellent breeding place for various germs of decay, and for this reason there is less likely to be rot where commercial fertilizer is used rather than manure. If the vines are blighted and the spores of decay are allowed to come in contact with the potatoes, the use of commercial fertilizer will not save them.

Do wood ashes make a good fertilizer for potatoes?

So far as the plant food in them is concerned, wood ashes make an excellent fertilizer for potatoes, but being rich in lime they have the same effect in making more favorable conditions for the development of the potato scab as do other forms of lime, therefore it is unsafe to use them for this purpose unless one is certain that no scab bacteria exist.

How much soil fertility will 200 bushels of potatoes remove? How much does nine tons of ordinary manure supply?

Forty-seven pounds of nitrogen, 76½ pounds of potash, 21½ pounds of phosphoric acid. Nine tons of ordinary cow manure will supply 72 pounds of nitrogen, 5 pounds of phosphoric acid and 75 pounds of potash. This is reckoning liquid and solid all saved. Manures vary so much in their composi-

tion that this would only be approximate. It must be remembered, too, that potatoes like all other crops obtain very much of their plant food from that already in the soil.

To get humus in soil for potatoes which is better, to sow buckwheat and rye, cut the buckwheat when in bloom and let it lie on the ground, or cut it for a crop and leave the rye to plow under?

The latter is the most economical way of obtaining humus. If the buckwheat has come to maturity and made a good growth, it may be unwise to allow it to lie on the ground as it will smother out the rye. It also involves the sacrificing of the land for one year. More humus can be obtained at some additional expense for labor by sowing the ground in the spring with some rank-growing variety of corn, about a bushel to the acre, turning this under in late August, then sowing the ground with rye. There is no other way that so much vegetable matter can be obtained in so short a time.

Would it be advisable to sow Canada peas early in the spring on a plot of gravel ground, plow the peas under and plant to potatoes the same season?

If the potatoes were to be planted as late as after the middle of June the above procedure might be advisable, but since the seed of the peas costs at least \$2 a bushel and not less than a bushel and a half per acre will be required, it might be an expensive way of obtaining vegetable matter and making available plant food.

How do cow peas and vetches compare with clover sod for plowing under for potatoes; and where can the seed be obtained?

Both of these are nitrogen gatherers as is the clover, and in this respect are fully equal to it, so far as fertilization is concerned. They both leave the soil in excellent condition, but they are very unlike in other characteristics. The cow pea is a southern plant which thrives best in warm soils and dry seasons. It must be sowed about the first of June, maturing in the early fall and making very little cover crop for the winter, and necessitates the entire occupancy of the land during this period. In the major part of New York its use is not recommended. The seed costs from \$2 to \$3 a bushel and can be obtained from almost any reliable dealer. The winter vetch, on the contrary, is a plant that comes from arid regions.

It should be sown in August, makes some growth in the fall and lives over winter. It starts rather slowly in the spring and will not make enough growth to be worth while for early potatoes. Where the crop is to be planted late it is admirable. This seed can be obtained of like dealers. It is also very expensive, costing from \$5 to \$9 a bushel, and at least half a bushel should be sown to the acre. Where it has not previously been grown, the soil often needs inoculation before it will thrive.

Should a clover sod which was plowed in the fall—turned over flat—be plowed again in the spring for potatoes? If so, how deep?

Unless the sod was plowed very early in the fall, reploting it in the spring will bring very much of it to the surface where it will dry out and fail to be the benefit it would if left underneath the surface. If the soil admits, deeper plowing is always desirable. Under ordinary conditions, it is preferable to have the clover sod intact on the land as a protection and a storer-up and retainer of plant food than to have the surface bare.

Is it better to plow clover under green and sow to rye the first of September, plowing it under the following spring for potatoes, than to mow clover, allow it to rot and plow in the spring for potatoes?

It is questionable whether the increased labor and cost of the seed rye would compensate for anything gained by this process, the clover being a plant that will make a growth not only during the fall, but the following spring. If the sod is thoroughly disked before plowing, doubtless fully as good results could be obtained at less cost than by the first-mentioned procedure. If animals are at hand to eat the clover, it is surely better farming to cut the first crop and obtain all the feeding value and the bulk of the fertilizer value in manure therefrom, than simply the fertilizing value by turning under.

Which would you prefer for potatoes, clover or manures?

There is nothing better to precede a potato crop than a clover sod, which is rich in nitrogen obtained without cost from the air, as well as affording plenty of humus for the retention of moisture and the liberation of plant food in the soils. If the clover sod is disked thoroughly before turning, the objection often made of its reducing the yield will be overcome. Ma-

nures are also excellent, but where one has the clover sod he will need less manure than where such is not at hand. But in both cases it will be wise to use in addition a 12 and 5 fertilizer and eliminate the nitrogen.

Is it better for potatoes to plow the manure under or put it on top?

The potato is a deep-rooted plant, and for this reason it is wiser to plow the manure under. In no case should manure be turned directly in the bottom of the furrow, but rather turned in such a way as to leave it between the furrows. There it will decay more rapidly and also help to retain moisture where most needed.

Will stable manure applied to sod be beneficial or detrimental to potatoes?

If stable manure is applied shortly before the potatoes are planted, it will make a splendid breeding place for various disease germs, and in that way may work an injury to the crop; but if applied to grass land in early fall or during the winter so that the snows and rains and frosts break it up, there will be little or no danger from this source. I have frequently planted potatoes so manured side by side with those where only commercial fertilizer was used, and there was no difference in the smoothness of the tubers.

Would heavy manuring cause potato scab if the tubers were treated with formalin or bichloride of mercury before planting?

Unless the bacteria were present in the manure, the use of large amounts would not necessarily produce scab, particularly on potatoes that had been treated. If there were some in the soil large quantities of manure would make very favorable conditions for the development of the scab.

What is the cause of potatoes blighting?

The potato blight is a fungous trouble, the blight spores wintering over in the old tubers. After these are planted and the ground is wet the spores multiply so that literally the earth swarms with them. Some find their way to the surface where they come in contact with the leaves or vines, which they destroy. If moisture is present they develop very rapidly and spread to other leaves, and under right conditions often destroy the entire crop. The application of bordeaux mixture to pre-

vent the entrance of these blight spores, if done in time, is a sure preventive.

How many times is it necessary to spray potatoes?

This depends chiefly on the season. Usually three sprayings will be sufficient, but experiments have shown that sometimes five were more profitable. The important thing is to spray early before the vines become contaminated by the spores of blight, thoroughly enough to cover all the foliage, and often enough to re-cover that which has been washed off and protect new growth. Each one must judge how many sprayings will be required to do this.



Spraying Potatoes

Will the lime-sulphur spray prevent late blight of potatoes?

While the lime and sulphur is a safer fungicide for trees than bordeaux, it has just the reverse effect upon potatoes. In all the plots under test by the Experiment Station wherever the lime and sulphur was used the yield was reduced. Bordeaux is decidedly better as a fungicide for potatoes.

What is the cause of potatoes wilting on the stem end? They were dug in good season and put in the cellar dry and in good condition. They are the Snow King variety.

The ordinary rot of potatoes comes from the blight. This is communicated to the tubers from the spores falling from the blighted leaves and washing into the soil by the rains. Naturally the end nearest the surface would be the most affected.

The spores present probably did not develop because the soil was dry, but in the cellar the conditions were moist and favorable for growth and hence the rot. This variety, being thin skinned, would be more likely to be affected than one having a thicker covering.

What kind of lead should be used for spraying?

Arsenate of lead is the most practical arsenical poison in use. It will not injure the foliage and will adhere very much longer than a powder like paris green. At present prices — seven or eight cents a pound — even though one must use three pounds to 50 gallons of water, which would be equivalent to about a pound of paris green, it is not more expensive than the latter. It must be remembered that it is not as quick a poison and, if the vines are left until they become badly infested with the beetles, they may do much injury before the poison has its effect; but inasmuch as it is not washed off it may be applied very much earlier than it is wise to apply the paris green.

Will potato vines be healthier for using “bug death” instead of paris green?

Paris green has done very much more injury to potato foliage than is generally supposed. Arsenate of lead, properly used, will be as effective and work no injury. “Bug death” is of doubtful merit to say the least, however little injury it may do to the foliage.

Would it be safe to use good and apparently healthy potatoes for seed this spring from a field which showed the blight or black rot last fall?

With such seed one introduces the spores of the disease with certainty. If clean seed were obtainable it would be much wiser to use it.

Will potatoes that blighted the past year and that are not good to eat be good for seed another year, and will tubers grown from such seed be palatable?

Nearly one-quarter of the make-up of the potato is starch, formed by the action of the sunlight through the green leaf. If the green-leaf surface is destroyed by blight, the power of the plant to make starch will be reduced; therefore such potatoes are lacking in a proper amount of starch and are more soggy when cooked and not as palatable. The blight spores are carried over in these tubers and under favorable conditions

will affect the next crop. If the seed is free from blight and no blighted pieces are in the neighborhood, there should be no blight in the field no matter what the weather or conditions.

What is the matter with potatoes when the tips of the leaves turn nearly black?

This is doubtless what is known as tip burn, the life history of which has not been fully determined. It seems to be a physiological disease. The potatoes have grown too rapidly, and later moisture or plant food is not available in sufficient quantities to continue the growth, and the extremities lacking nutriment and moisture are affected by this trouble. Bordeaux mixture is of some slight value in preventing it.

Can seed potatoes be so treated that rot will be prevented?

There is no known way of treating seed potatoes to prevent rot.

What is the treatment for potato scab?

The potato scab is a bacterial disease not dissimilar to an ulcer in the human flesh. It may be communicated to the tubers from the seed, or it may be in the soil itself. In the latter case, not very much can be done by treating the seed. Rather favorable results in such cases have been obtained on Long Island by the use of 500 pounds of sulphur per acre applied with the fertilizer before planting. Where the soil is free and only the seed is affected, soak the seed after cutting, for at least one hour, in a solution made of one pound of 40 per cent. formalin to 30 gallons of water. The seed may be suspended in this liquid in a bran sack and the liquid may be used again for treating other seed. Care should be exercised that the treated seed is not put in vessels that have contained the untreated or it may again be contaminated.

What can we do to stop the ravages of wireworms and white grubs in crops, especially potatoes?

There is no sure known way of exterminating wireworms. An excellent plan is to sow the ground with buckwheat. From this they seem to be unable to get sustenance and die from want of nourishment. The white grubs come from the May beetle which lays eggs in stubble land. The third year the grubs ap-

pear. By avoiding sods or stubble that has lain over one year, there should be little trouble from the white grub.

What is your opinion of salt for wireworms in the potato or barley field?

While the use of salt as a preventive of wireworms was quite largely recommended at one time, careful tests have shown that, although the salt is somewhat objectionable to them, if necessary they will breed in it, and therefore its use has been abandoned. The same may be said as to the barley field, except that the silicate in the salt has a tendency to strengthen the straw and make both grain and straw lighter in color, but the benefits derived are not sufficient to pay the cost. Better use some of the potash salts which are rich in potash, and whatever mechanical results are obtained from the salt will come from them as well.

How does arsenic and sal soda compare with arsenate of lead for potato bugs and flea beetles?

Arsenic and sal soda, making arsenite of soda, is a very good and quick poison. It must be used in combination with bordeaux mixture or lime, otherwise it will burn the foliage. The composition of arsenate of lead has been given. Flea beetles are not very susceptible to poison of any kind. The bordeaux mixture seems to make the plants distasteful to them and they go elsewhere.

What causes grubs in potato stalks, and is there a preventive? To what extent do they prevail?

The stalk borers do considerable damage to potatoes. There is no preventive or cure known except to cut out and destroy the affected stalks. They seem to be local in their work; fortunately the injury is not general.

Will lime prevent scab on potatoes, and how should it be applied?

Lime tends to increase the amount of scab because it sweetens the soil, and soil that is excessively sweet or alkaline is more favorable for the development of scab. For this reason it is usually better where lime is used to apply it after the potato crop is harvested or a year or two previous.

Will fertilizer attract worms to potatoes or drive them away?

Insects of all kinds have no liking for fertilizer, and the tendency of a strong-smelling one is to repel them, but where wireworms or grubs are abundant in the soil do not rely on the fertilizer to save the crop from injury by them.

Why will potatoes keep better where it is cool?

After the potato has completed its growth its natural tendency is to put out sprouts when conditions are right. A cellar that is warm will, of course, favor such sprouting. Again, most disease germs grow more rapidly where they have warmth, and in a cool cellar they would be less likely to rot than in a warm one. Of course, the cellar should be dry.



Getting Ready for Market

BEANS

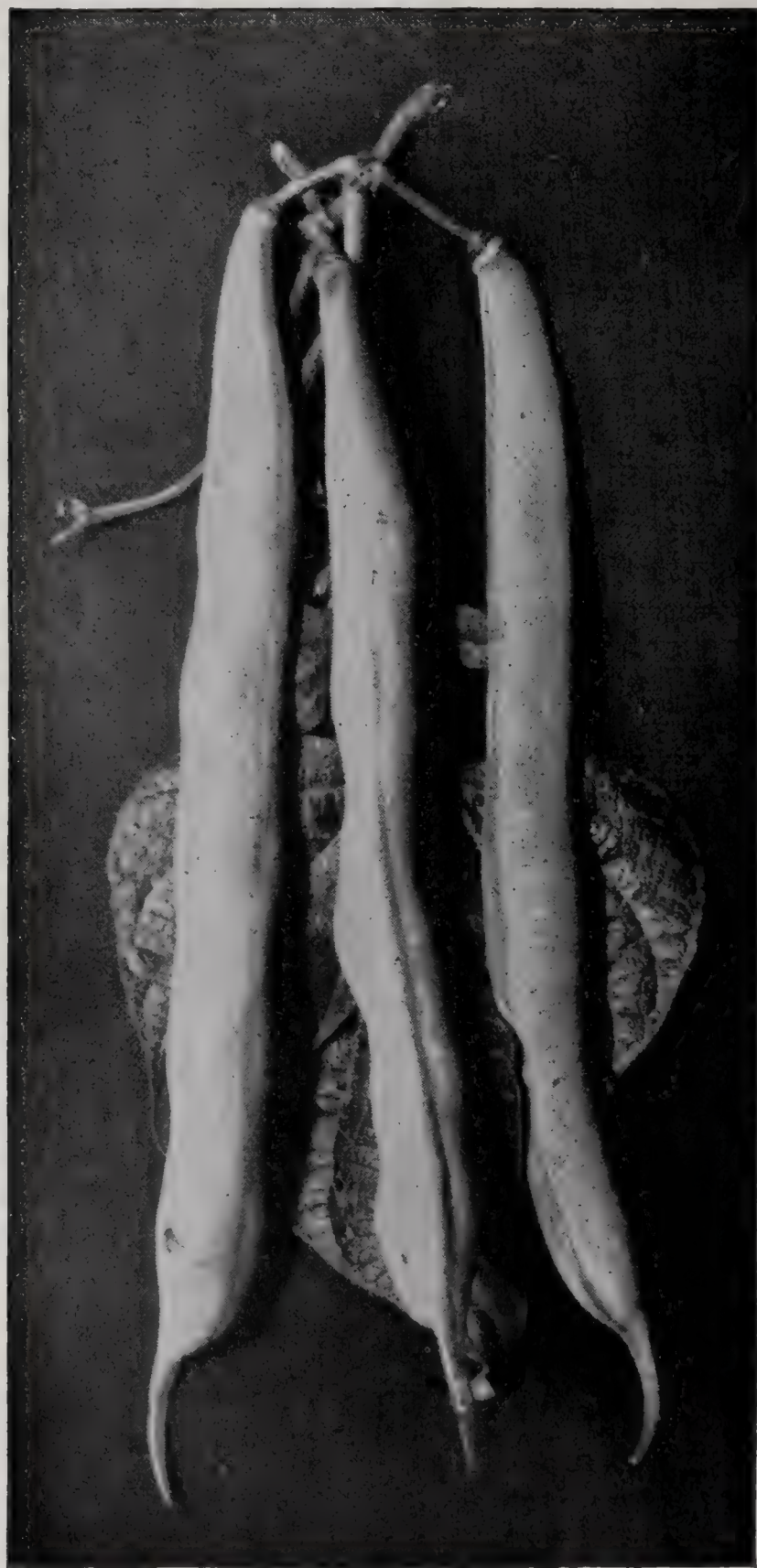
Are beans of value to the soil, adding nitrogen like peas and clover?

Beans are of great value as a nitrogen-drawing crop. Land does not receive exactly the same kind of benefit that it receives

from clover and peas, but with the present method of harvesting — by cutting the stalks off — the nodules are left in the land. This is of some benefit, but a greater is derived from the pods going back on the land in manure. Beans are one of the best crops that a farmer can raise in rotation in building up the farm.

Which kind of beans are the more profitable, red or white?

The variety of beans to plant is largely a question of locality and whether or not you wish to follow the beans with a wheat crop. Red beans do best in good, strong, rich soil that holds the moisture, and with proper care will yield



well on such soil. One great advantage of the red beans over the white is that they are not injured by wet weather. The

pea or medium beans are better adapted to dry land than the red, and will ripen ten days to two weeks earlier on any variety of soil.

Give the best method of growing beans for garden use and name some good varieties. What is the best time to sow and what is a good fertilizer to use?

Plant on good soil, hills about six inches apart in rows twenty-eight inches apart. The Black Wax, Refugees, Red Valentines and Early Six Weeks are all good varieties. They should be planted from the 5th to the 15th of June; 4-8-12 being a good fertilizer to use.



Beans Make One of the Best Crops a Farmer Can Raise in Rotation

Do you recommend changing seed beans and how often?

Experience has shown that seed beans should be changed every year. Seed from a different locality, grown under different climatic conditions, have shown an increase in yield of 50 per cent. over beans raised in the same locality planted year after year. Use seed from one man's crop if possible and from a crop that has been rogued when growing.

Would you advise plowing down rye for beans?

This depends altogether on the season. To get any growth of rye means that bean land cannot be plowed until about the 15th of May. This would work out all right if it was a wet, growing season, but in a dry summer the late plowing under of a mass of green stuff might result in serious loss from drought. However, plowing down the rye would add some fertility to the soil.

How should sod ground be prepared for bean planting, and when is the best time to plant?

Plow sod ground as early in the spring as possible; roll down and leave it. In doing this there are two advantages: First, treated in this way your ground will hold the moisture through the summer. Second, you have a chance to kill two or three crops of weeds, so there is very little hoeing to be done after the crop is planted. Plant from the 10th to the 20th of June.

When would you advise plowing sandy soil that is quacky for beans?

The best way to destroy quack on any land is to plow it very deep early in August when the quack plant is at its weakest. Keep the surface thoroughly tilled during the fall so that the quack leaves will not appear on the surface. In the spring re-plow, not quite so deep, and thoroughly fit until time for planting the beans. If they are kept well cultivated during the season the quack will have very little chance to sprout. This means eternal vigilance.

What is the best phosphate to use on beans?

Use the best phosphate you can secure; 4-8-12 is a good one. Some people advocate using no nitrogen, but it is a great mistake; beans want a quick, strong start, and nitrogen will encourage it.

Which is the better way to use commercial fertilizers for beans planted with a grain drill—to sow with the beans or drill in before planting?

The best way to use commercial fertilizer is to sow on the land about two weeks before bean planting, with a grain drill, every tooth sowing. This should be done after the ground has either been rolled or dragged the first time after plowing, so

that in fitting the land the fertilizer will be thoroughly mixed with the soil. The mistake a great many farmers make is not sowing enough fertilizer to the acre. Two hundred and fifty to 300 pounds applied in the manner indicated and thoroughly worked into the soil will not harm the beans and will show excellent results.

Is it safe to put in 250 pounds of 10-8 phosphate to the acre on beans planted with a two-rowed planter? If not, what quantity should be used?

It is not safe to put any kind of fertilizer in the same drill row with beans, as it is likely to injure the germination. Drill the fertilizer on the land before planting. Beans root clear across the row and every root needs feeding, and if there is no fertilizer in the center of the row 75 per cent. of the roots will not get the benefit.

If beans are planted on the same ground as that on which beans containing the bean weevil were grown the previous year, will the weevil be found in the new crop if the seed used is free from them at the time of planting?

It is not advisable to follow one bean crop with another and it is not good policy; especially if any disease or insect has damaged the previous crop. Use a long rotation and you will have very little trouble with disease or pests in the bean crop.

What can I use to kill snails and not injure the beans?

Snails appear in beans that are grown on wet, damp ground. To rid your crop of them first thoroughly underdrain the land, then use lime at the rate of a ton to the acre, worked into the ground two or three weeks before planting. Snails will not find a very comfortable home in lime-treated land.

When is the best time to harvest beans?

This sounds like a foolish question, as the answer might be "when they are ripe," but too many farmers make the mistake of cutting beans before they are thoroughly ripe. It is better to let the beans cure standing, even if they are cut by frosts, as it is almost impossible to cure beans that are full of green pods in the bunch. In the harvesting of beans many crops are a total loss every year by beans spoiling after they are threshed, due to cutting before beans are ripe.

CABBAGE

"Would to God you could see the cabbages I am raising, you would never want me to be emperor again."

DIOCLETIAN, *Emperor of Rome*

Give some general advice as to securing a good yield of cabbage.

Select a fairly rich, level, loamy, well-drained soil where manure was applied to a previous crop or at least during the preceding winter, or a clover sod. If sod, plow as early in the spring as practicable, and see that you plow a good deal better than you ever plowed before, turning the furrows straight, even and to a good depth. Roll and harrow down each day as fast as plowed. Roll and harrow often until all lumps are pulverized and you think the land is in perfect condition. Then work it a little more. If fertilizer is to be used, apply it broadcast at the time of the last harrowing and at the rate of 400 or 500 pounds per acre of a complete fertilizer containing not less than 3 per cent. of nitrogen. Set good stock plants from June 25 to July 10. Begin cultivating as soon as plants revive and continue cultivating once a week as long as the horse can get through the rows. If your attention has ever been attracted to a beautifully tilled field, first try and make your cabbage plot a little better than that one.

Is it advisable to raise cabbage on a lot that raised a crop last year, and would lime be a help on a loam soil?

Generally speaking, it is not considered good practice to plant the same field year after year with the same crop. Under such methods insects and disease increase and the land itself becomes tired of the same crop successively. A rotation of crops is in many ways desirable. Lime is a valuable application for cabbages. It almost entirely prevents club root, helps to control the maggot and increases the fertility of the soil, thus increasing the yield.

What is the best fertilizer for cabbage?

It is very difficult to give a formula for fertilizer that would be "best" under all conditions. A high-grade fertilizer containing 4 per cent. nitrogen, 8 per cent. phosphoric acid and 6 per cent. potash should give good results under average conditions.



A Crop of Danish Cabbage

What are the best varieties for fall and winter?

For fall, Successive and All Seasons; for winter, Ballhead Danish.

Which cabbage pays best, red or Danish?

Red cabbages are not so certain to make a crop as are the Danish. They require more skill in growing and, on the whole, are not so profitable.

How shall we get rid of cabbage lice?

This is not easy. Watch the field closely and remove and burn the first infested plants to prevent their spread. Spraying with kerosene emulsion or a nicotine preparation will kill the lice that are reached by the spray, but they are mostly on the under side of the leaves and are protected by the leaves curling around them. They are not usually destructive in seasons of normal rainfall.

What may be done for cabbage maggot?

Where the cabbage maggot is prevalent the plants should be grown under cloth. Boards twelve inches wide are set on edge around the seed bed, and cheap cloth is stretched from side to side, being held in place by wires or slats. This is effectual in preventing the fly from laying in the ground eggs which produce the maggot. The cloth should be removed a week before plants are to be set.

What causes grubs in cabbage, and is there a remedy?

I do not know what is meant by "grubs" in cabbage. If it is the cutworm, they may be found in the morning close by the plant, which was "cut" the preceding night, and destroyed. They may be poisoned by mixing up balls of bran, molasses and paris green, of which they are very fond, and distributing these balls along the rows. The green worm is occasionally destructive, but the damage from it is more apparent than real. They may be poisoned by mixing paris green with rye flour and sprinkling the heads with this mixture.

What causes cabbage to rot?

A disease known as black rot. Treat the seed with the following mixture: Formalin 1 pint, rain water 30 gallons. Sprinkle the seed until wet. Cover one-half to three-quarters of an hour, then dry.

What causes club root in cabbage and what is a remedy?

Club root is a fungous disease and is carried along year after year in a soil on the roots of allied plants and some weeds. Lime is almost specific when applied at the rate of 50 or 75 bushels of quicklime to the acre. A rotation of crops should always be practiced.

What is the best way to bury cabbage?

It is better to keep them in a suitable storehouse. They may be kept well by placing on a level bed, heads down, and covering with dirt by plowing or otherwise. As the cold weather increases completely cover with straw.

What is the best method for storing cabbage for family use in winter?

If a cellar is available where the temperature is just above the freezing point, cabbage may be hung by the roots and will keep in excellent condition. If the cellar is too cold, a barrel may be put in earth with a cover and this protected by some coarse material to keep out the frost so that the cover can be easily raised and the cabbage put there. For spring use an excellent plan is to throw out a couple of furrows on porous soil, place the cabbage with the heads down and cover them over with earth. After the frost has drawn out of the soil the cabbage may be removed as used and should be fresh and tender as when first gathered.



Allhead Early

HORTICULTURE

Apples	Grapes
Pears	Currants
Quinces	Gooseberries
Peaches	Raspberries
Plums	Strawberries
Cherries	Gardening

*“ Every Thanksgiving time, also, comes with unwonted happiness to our earth. The eighty millions of people understand the treasures of the orchards, for the markets in the cities are filled with apples and pears, with plums and peaches and clustered grapes. Gone are want and poverty from our people. The whole land has become the garden of God. * * * The orchards have ripened their fruits, and in peace every man sits under his own vine and fig tree.”*

NEWELL DWIGHT HILLIS

APPLES

“ Verily, the old apple tree carries all the memories of the years.”

L. H. BAILEY

Which is the best variety of sweet apples?

For family use the Sweet Bough or Harvest Sweet is an excellent summer variety; also the Golden Sweet, which yields



heavily. Bailey's Sweet is a beautiful, dark red apple, but seems to attract all the insect pests. Tallman Sweet is the standard for fall and winter.

In an eight-acre orchard, what variety or varieties of apples would be best as fillers; or would it be advisable to use peaches, plums or quinces as fillers in place of apples?

If a farmer has an abundance of orchard land and can utilize crops planted between the trees to advantage, it is wiser to extend the acreage and plant the smaller, early maturing varieties by themselves, where they may live out their natural lives and not have to be removed when they have four or five years of their most profitable life before them, as will be the case if they are interplanted. Where he has but a limited acreage and desires to get all his revenue as quickly as may be from his fruit, fillers are permissible. Planting other fruits among apples is unwise, as the cultural methods and spraying are different. For fillers in such cases the Alexander, Dutchess, Wealthy, Rome Beauty or Suttons are to be recommended.

With thorough cultivation, properly fertilized soil and well-drained land, how long will it take the following varieties of apples to come into bearing: Greenings, Baldwins, Alexanders, Fall Pippins?

The Baldwins and Greenings should begin to bear commercially at from eight to ten years of age; the Fall Pippins and Alexanders, a year or two earlier.

How are the Rome Beauty apples doing in the Hudson Valley?

Rome Beauty has not been planted extensively in the lower Hudson Valley. Wherever they have been grown for any length of time and to any extent, they are giving excellent satisfaction. While the tree is rather a small grower, it is an annual bearer; the fruit hangs on well and keeps well, is free from blemish and sells for a good price.

What is the best stock to set for top-grafting apples?

The Tallman Sweet and Northern Spy are both particularly good stock for this purpose. They are vigorous and free from diseases of the trunk, with very solid wood growth. Ordinarily, it would not be advisable to set with the idea of top-grafting, except in the case of the King and Twenty Ounce, which are very poor stock.

At what age should a well-cared-for Baldwin tree produce apples?

Ordinarily, a Baldwin will begin to bear commercially at about ten years. Of course, the quantity from even a well-

grown tree of that kind will not be large, yet two to four barrels have often been obtained. Trees five to six years old that have not been headed back or over-pruned have frequently produced from one-half to one barrel of apples.

Is the Ben Davis more free from San José scale than some other varieties?

No. The Ben Davis is one of the most susceptible to San José scale.

Do Northern Spy trees begin to bear earlier than Baldwins?

No. The Northern Spy is late getting into bearing; the Baldwin is usually from three to five years earlier.

What varieties of apples are recommended for New York State?

The following is a list of varieties of apples of known commercial value:

LAKE CHAMPLAIN DISTRICT

Permanent

Filler

McIntosh, Fameuse, Greening, Northern Spy Alexander, Oldenberg, Wealthy

HUDSON RIVER DISTRICT

Baldwin, Greening, Fall Pippin, McIntosh, King Alexander, Oldenberg, Wealthy, Rome, Sutton, McIntosh, King

SCHOHARIE-CATSKILL DISTRICT

McIntosh, Esopus, Greening, Baldwin, Northern Spy Alexander, Oldenberg, Wealthy

WESTERN NEW YORK

Baldwin, Greening, Northern Spy, King Rome Beauty, Twenty Ounce, Alexander, Oldenberg, Wealthy

SOUTHERN TIER OF COUNTIES

Same as for Western New York

Does it pay to set dwarf apple trees?

No, except on lawns or in a small village lot where only a few trees can be planted. The Geneva Experiment Station has three experimental orchards in different parts of the state, which have been set eight years, and they have demonstrated that while the dwarfs bear slightly earlier than standards, they have no other advantage. The fact that they are shallow rooted is a fatal objection, and is more apparent as the tree grows older and the top increases in size. While a greater number can be set on an acre than of standards, more labor is required to care for them, and there is no more bearing surface than with a smaller number of standard trees. The low-headed standard has all the advantages of the dwarf and none of its objections.

Are apple trees from a nursery better than those taken from fields and grafted?

Nursery trees are usually more symmetrical and, when well grown, to be preferred to those taken from fields and grafted. Nevertheless where the latter are numerous and can be had for the labor expended, it is a wise practice to set them out and graft them.

Can we buy reliable fruit trees direct from the nursery for less money than asked by fruit tree agents?

Persons buying trees of an agent must, of necessity, pay the agent's commission. A careful buyer will submit his list of wants to various producers.

Which are better to set, one or two-year-old apple trees?

The advantage of buying year-old trees is getting the pick of the nursery, since only the best are suitable to sell at one year. But if well-grown, shapely two-year-old trees can be obtained, they are to be preferred. In 99 cases out of 100 a tree is better at three years old if grown for the first two years by the skilled nurseryman, whose business and purpose it is to produce a thrifty tree, than if set as a yearling.

Is it advisable to plant nursery trees over two years old?

No, unless it is of some rare kind and no young trees can be obtained. There is no tree on the market, nor has there been for the past five years, that is three years old and not a cull. Were it not such, it would have been sold as a yearling or a two-year-old, the demand for such being greater than the supply.

Can ten-year-old apple trees be safely transplanted? If so, how and in what season?

It would not be advisable to try; better set young trees.

Are cold storage fruit trees as good for planting as those freshly dug?

It certainly is better to plant trees directly from the soil than those that have been held in cellars all winter. Most of the trees for spring setting are so held, and this is one of several reasons in favor of fall setting.

Where can low-headed apple trees be obtained?

At any first-class nursery.

What is the general opinion in regard to setting southern grown trees in New York State?

If the trees are to be set in the fall, home-grown are preferred as they will be more likely to have their wood matured. Those coming from farther south are much more likely to be injured during the winter because the wood has not hardened sufficiently. In the spring there is not the same danger, and very often when getting trees from the south they can be dug in time to reach New York State for early setting, which is an advantage, whereas the home-grown trees obtainable at that time must have been kept in the cellar. With these exceptions, we would prefer a New York State tree.

What is a low-headed tree?

Experience has shown that a Greening tree with the first limbs about four feet from the ground, and a Baldwin two and one-half or three feet, is a practical low-headed tree.

With local market, what is the approximate value of an apple tree averaging 15 inches in diameter?

This depends somewhat on the variety and vigor of the tree. Many trees of this diameter are of little worth because they are irregular and poorly nourished; but if strong and vigorous, a tree of this size on good ground, and of one of the standard varieties, should be worth at least \$100.

What is the best soil for setting out a new orchard? Does the slope of the land affect orchards?

This will depend somewhat on the character of the fruit. For any fruit the soil should be well drained and reasonably warm, peaches particularly so. While apples do best on the loams and gravels, some varieties give good results on heavy soils. It is preferable that the trees should slope to the northeast rather than southwest, although this is not vital.

Is it possible to raise any kind of good fruit on a heavy clay soil?

It is possible, but not so profitable, depending, of course, on how heavy the clay soil is. Pears will do much better on this character of soil than apples; but no such soil should be used for an orchard until it is thoroughly underdrained.

Is hard or sandy land best for apples?

Sandy loam.

Should apple trees be set on rather thin clay loam with heavy clay subsoil?

If other land is available do not set apples on such land, particularly with the heavy clay subsoil, unless it is well under-drained.

Will apples thrive on stony land with a gravelly or sandy subsoil?

If the subsoil is deep enough they will do well on such land, but the cultivation is more costly.

Is a dry, gravelly soil suitable for an apple orchard? If so what varieties would you recommend?

Yes, if well drained and not at too great an elevation. Varieties are very largely matters of locality. See list of varieties for different sections on page 555.

Is it advisable to plant young trees where an old orchard recently stood?

If the young trees are planted in the center from where the old ones stood, it will be all right to replant the soil. It is not wise to set a young tree in the space occupied by an old one.

What is meant by "air drainage" as applied to orchard ground?

A site for an orchard having air drainage would be one with lower levels in which the cold air could settle outside of the orchard. Orchards planted in pockets are liable to winter injury.

In putting out an apple orchard would you advise spring or fall planting?

Fall planting, under ordinary conditions; any day after the tree has completed its growth until the ground freezes. Every day after the ground is fit to work in the spring is not quite as good as the day previous. The roots of the tree will begin to callous over even in the fall; the tree will be much more firm in the spring, settling with the earth, than would be possible to have it with spring settling. It is also ready to grow the very first moment that vegetation starts. Most spring-planted trees are wintered in nurserymen's cellars, which does not tend to promote their vigor. This does not apply to one-year-old trees, which, because of their rather soft wood, are very much more liable to be injured by fall planting and severe cold.

How many apple trees should be planted to the acre?

Depending on the system of planting, the number of standard trees per acre would vary from 26 to 105, if set at distances varying from 20 to 40 feet apart each way.

How far apart should apple trees be set; is a filler of some quick-bearing variety advisable, and if so, what kind?

This will depend somewhat on the variety. Widespreading sorts, such as Greening, Baldwin or Spy, should be set, if alone, not less than 40 feet; if a filler is used, 50 feet. Those not so spreading — Hubbardson, Sutton or Wealthy — may be set 30 to 35 feet apart.

As to fillers: If a man has only a moderate amount of orchard land and his chief industry is the growing of apples, it may be wise to set in the diamonds some of the quick-maturing, smaller trees just mentioned; and where the large trees are set 50 feet apart, these trees can live out nearly their natural life, which is about 30 years, before they will interfere with the larger trees. On farms where lines other than orcharding are followed, and orchard land is plenty, it is wiser to set each kind by itself, as indicated above, thus allowing the younger trees to live as long as they can. The last four or five years of their lives will probably be the most profitable, and when they are set as fillers some of these years must be sacrificed or the permanent trees will be injured. It should always be remembered that the roots of the trees will extend fully as far as the branches.

In setting an apple orchard is it advisable to set peaches as fillers?

Not in a country where peaches grow satisfactorily. The culture method and spraying are quite different from that required by apples. In sections where, because of the uncertainty of the crop, one cannot afford to devote his land wholly to peaches, it is permissible to set peaches as fillers among the young apple trees.

How should ground that has lain fallow for 12 years be treated before setting trees?

Plow and plant corn; manure if necessary. Then set the trees, preferably in the fall after the corn has been harvested. Bank up the trees well to prevent swaying by the wind and to keep mice away. Remove the banking early in the spring.

Is it well to set apple trees in sod?

The apple to do its best should be cultivated and, while it is permissible to set apples in sod and for the first year or two cultivate about the base of the tree, such cultivation is apt to be neglected. Of course, there may be conditions where it is wise to set apples on land not cultivatable, and then of necessity they must be set in sod.

How should the excavation be made to set a young tree where an old one has stood? Should all the old roots be removed?

Enough of the roots should be removed to allow a large hole to be made for the young tree. This would better be filled with new soil from another place, as that immediately about the tree is likely to lack the necessary available plant food. But it seldom pays to put a young tree in a mature orchard where an old one has stood. The treatment required for the two are entirely different.

Is it better to have the roots of trees wet and put dry dust on them, or put water in the hole before setting tree?

It is wise to have the roots of the trees full of moisture. This can be easily done by placing them in a tub or barrel of water just before setting. Unless the ground is very dry, it will not pay to put water in the soil. Tamp the earth tightly about the roots and keep the surface soil stirred as a mulch, and the major portion of the trees will live.

What is a good fertilizer to use when setting pear, peach and apple trees? How much for each tree?

If the land is in good condition do not add fertilizer at setting.

Is it advisable to dip young trees in lime-sulphur before setting?

Yes, if infested with scale. The roots should not be immersed in the liquid.

In setting fruit trees, if the roots or top limbs are bruised or broken would it not be better to cut them off with a sharp knife?

Yes, all bruised or injured roots or branches would better be removed.

Is there any danger of planting young trees too deep?

As a rule, no; most young trees are not planted deep enough. The tree should always be planted at least one inch deeper than

it stood in the nursery row, and many trees are planted much deeper than that with good results.

Will an apple tree grow the second year if the tree wood keeps alive the first year, but does not show any growth?

Yes, but it will be an unprofitable tree and would better be replaced.

Will woods near an orchard affect the orchard bearing?

Not necessarily so. If the wood is so situated that the air is shut off, it may prevent the spread of the pollen and so affect the orchard bearing. The same condition might favor the development of fungous troubles. If there are cedars in the wood, the cedar rust is very likely to affect the trees injuriously.

Which is the better method, grafting or budding?

Either method may be followed successfully. Older trees should be grafted, not budded. Budding requires more skill, and when one understands it, is to be recommended for young trees.

When is the best time to graft apple trees?

Apple trees may be grafted any time from early spring until the blossoms appear, when the weather permits working the wax. The scions should be cut while they are dormant.

How large limbs is it well to graft?

Not larger than from two and one-half to three inches.

Please give a proper method of selecting and keeping grafts?

Scions to be used for grafting should be cut in December and be of the past season's growth. They can be tied in small bundles and left standing in the cellar, if not too dry. The safest way is to pack them in sawdust and place them where the buds will not start nor dry out. The sawdust in an ordinary ice house is a good place in which to bury grafts.

Will scions taken from trees of exceptional merit have any advantage when grafted over other scions?

This claim has been made by many, but there is really no foundation for it. The majority of the most profitable trees in the orchards of the country had their buds or scions taken indiscriminately from trees in the nursery row. The argu-

ment often used of the value of pedigree as illustrated in live-stock does not hold, because with a tree of exceptional merit there is nothing known about its ancestry, and its merit is probably due to the fact that it has had better treatment and environment.

Does the usual method employed by nurseries in propagating apple trees tend to make them unproductive?

No. There has been a great deal said and written about the manner of propagating apple trees from buds or scions taken from other nursery trees, intimating that it tends to make them unproductive, but of this there is no satisfactory evidence. On the contrary, the thousands of most productive trees scattered all over the country, propagated in this way, would indicate that there is no foundation for such a statement.

What time in the spring is best for putting in whip grafts?

If the scions are in good condition, apples and pears can be grafted any time until the leaf buds begin to swell, but plums and cherries should be grafted prior to this period.

Is it safe to use scions of a tree that has canker?

No, this practice is unsafe.

Please give directions for making grafting wax, and instructions for using it.

Melt together one pound of tallow, two pounds of beeswax and four pounds of rosin and pour into a pail of cold water; grease the fingers and pull like candy. This should be soft and pliable in moderately warm spring weather, and can be applied with the fingers, care being taken to cover all cut surfaces. It may be necessary to grease the fingers occasionally to prevent the wax from sticking. In cold weather use one pint of linseed oil with one-half pint of tallow.

Would it be advisable to graft Ben Davis apples to some other variety?

No. The Ben Davis is a very poor stock on which to graft, as it grows too rapidly for most other varieties. But in spite of its quality, the Ben Davis is certainly a profitable variety and, while I should not advise setting them to-day, if I had them on the land I would let them remain.

Should King trees be set on their own roots or grafted on some other variety?

Top-work on vigorous stock like Northern Spy or Tallman.

What variety of apple is best to graft on russet stock?

Twenty-Ounce and King if the russet is a Roxbury. Golden or English Russet trees are not good stock to graft.

Would it be advisable to top-graft Roxbury Russets that are 35 to 40 years old? If so, what variety would be best?

Yes, if the trees are vigorous graft them with any variety profitable in the locality.

Can crab-apple trees be grafted to advantage?

It does not pay to graft the crab-apple with other stock. Its wood is so different from those of other sorts that poor union usually results.

Would it be advisable to cleft-graft an old tree entirely the same year?

No; do not cut it too much any one year.

What can be done for apple trees that have been partially girdled by rabbits?

Such trees may be saved by what is known as bridge-grafting, where twigs are cut somewhat longer than the space girdled and slipped into the live bark above and below the girdle. These allow the circulation of the sap and eventually the wound will heal over. It is wise to disinfect the exposed surface with a solution of corrosive sublimate or strong lime and sulphur.

How can an old orchard be brought into bearing?

By very thorough pruning, thorough cultivation in spring and early summer, by fertilizing the ground well and properly spraying the trees.

What is the best time to prune apple trees?

This depends somewhat on the character of the tree. Two general principles may be followed. Pruning a tree when it is dormant tends principally to encourage the growth; pruning it when it is in full leaf and the sap is circulating freely is more of a shock to the tree and tends to produce fruitfulness. With these facts in mind one can best judge the character of his own trees. Ordinarily, because of the less demand on the time of the pruner, and because the bark is less ready to slip, most of the pruning will be done — and properly too — in the dormant season; but when one has young trees that are not fruiting and are making very rapid growth, it is certainly

wiser to defer this pruning until June or July. On the contrary, a tree that is a feeble grower either through habit or untoward conditions, would be better if pruned when dormant.

Is it advisable to trim apple trees in November or December?

Any time in winter when they are not frozen.

How should two-year-old, low-headed (under two feet) apple trees be trimmed to set?

Remove the branches that are likely to crowd and shorten any that may be unduly long; then set. Do not shorten back the remaining branches. Experiments at the Geneva station the past two years have shown that trees not cut back, and trimmed as above, made better growth, and a larger proportion lived than where they were severely headed back and thinned out.

Should apple trees be trimmed the first year, or at what age should trimming begin?

Many of the most successful orchardists as well as the scientists are practicing and advocating trimming the young trees very little the first year, and later taking out only superfluous branches which interfere with one another, or diseased or broken ones, allowing the tree to form its head as nature intended. Such trees will bear earlier than those severely pruned, particularly if in pruning the ends of the limbs have been cut off.

In trimming an apple orchard is it proper to cut out the center of the tree, or is it better to give it a general thinning?

Do not take too many branches from the center of the tree; more trees have been ruined by overpruning than otherwise. Take out no more wood than necessary.

If the roots or a portion of trees have been broken off, would it not be advisable to trim the top in the same proportion?

Theoretically, yes; but this need not be carried to extremes if the remaining roots are strong and sufficient to nourish and support the tree.

What method of pruning should be used on apple trees which tend to grow straight up?

These are the most difficult kind of trees to prune, the Sutton belonging to this class. By cutting off the ends of the limbs just above an out-growing bud, the tree may be made to have

somewhat of an outward growth. The only objection to this sort of pruning is that the ends of the limbs where the cut is made is apt to make a bushy growth that in time may cause the tree to assume the form of a hedge; this must be well thinned out. Of the two evils this is the lesser.

How high should a young apple orchard be headed, and why?

Trees of the Baldwin type are inclined to grow upright — head them about two and one-half or three feet; those of the Greening type, from four to four and one-half feet. Many trees are suffering from what is called sun scald, doubtless caused by injury to the tender trunks grown rapidly in nursery rows in the shade of other trees. When these trees are planted with the limbs well down, they afford a partial shelter, and trouble of this sort is more rare; also, the fruit suffers less injury when blown by winds. It can be much more easily gathered, and some of the fine varieties suitable for boxing as it becomes ripe, can be taken directly from the tree and placed in the boxes. Over and above all, such trees can be economically and freely sprayed.

The objection will be raised that they are more difficult to cultivate. This is more seeming than real, for while they are young they can be readily cultivated with the reversible beam, one-horse plow, and later on by the modern orchard tools that extend under the branches and allow the team to walk outside.

Is it practical to head back young apple trees from five to seven years old?

In some cases it may be, but ordinarily it is better not to head back, as most apple trees bear their fruit on two-year-old wood and at the extremities of the limbs.

When a large limb is cut from a fruit tree should anything be applied to the bared place?

It is wise to cover the wound with lime and sulphur wash as a disinfectant, and later with white lead. This keeps out the water and disease germs.

What effect has coal tar on fruit tree wood, cut or uncut?

The gas tar made from coal is recommended by Professor Reddick, of Cornell University, as the best covering for cuts or wounds on old trees, but there is a decided difference of

opinion as to the advisability of using it on younger trees. It is certainly dangerous to apply large quantities of this material, in view of the fact that many young orchards have been injured and destroyed by it.

In trimming a neglected orchard should anything more than the dead wood be removed at first?

If there is much brush, it should also be removed.

Should stubs of from one to two feet in length be left where the limb is dead, and what ground is there for such treatment?

None. Any limb which has not live branches growing from it to draw in the sap soon begins to die, and dead wood is a good breeding ground for all sorts of germs.

What is meant by dehorning trees?

This means cutting out the tops of large trees. While it makes it possible to more thoroughly spray the trees and more easily gather the fruit, it is likely in the end to injure the tree. It is only permissible where the trees are low-headed enough that sufficient bearing wood to produce good crops remains after the top has been taken out.

What is the best method of dehorning an old apple orchard that has been trimmed to thirty or more feet?

When a tree that has been trimmed to 30 feet from the ground has its top removed there is generally very little left. In such cases it is better to de-tail than to dehorn, and plant another tree.

Can Baldwin trees 35 years old be dehorned without danger of sun scald?

It is a serious surgical operation. In orchards that have grown too high on account of being planted too close, it is better to take out every other tree.

What can be done with an old Baldwin tree, 45 years old, that is full of suckers and dead wood?

If there is not a goodly proportion of live wood in addition to that dead and the suckers, it would be better to cut the tree down, particularly if it has been high-headed. A Baldwin tree at 45 ought to have at least 15 years more life, and it may pay to clean it up and give the good branches a chance. This will be determined largely by the soundness of the trunk of the tree.

Would it pay to cut out the alternate trees in a thirty-year-old orchard set 30 feet apart, if the trees are crowded?

Yes, if the trees are of spreading varieties, there would be a reduction of the revenue for a year or two, but ultimately the production of the orchard would be greater and the life of the trees would be extended.

Will underdraining increase the yield of an orchard?

Trees will do no better with wet feet than will human beings, and if the soil of an orchard is such that water stands in it, it is absolutely necessary that it be underdrained.

In setting out a young orchard should it be drained midway between the rows of trees or should the drain run directly under the trees?

Midway between when possible.

When is the best time to plow an orchard, spring or fall?

Spring.

To what depth should apple orchards be plowed?

Four inches is as deep as the land should be plowed as far out as the branches extend. Beyond that between the rows the plowing may be deeper. This will be determined by the nature of the soil.

What is the cause of trees suckering from the bottom. Would you take them out when they look sickly and have not made much growth?

These sprouts are an indication there has been some injury to the root system of the tree, usually too deep plowing. Throwing the soil well to the trunk of the tree will help and cutting off such sprouts early in the season when they first appear. There is nothing else that can be done. If the tree continues sickly it would better be removed.

Is it better to work up the ground in an apple orchard with a pulverizer than to plow in the spring?

Under ordinary circumstances there is no tool that will so thoroughly and, all things considered, so economically work up the soil as the plow; therefore in most cases, it is the most desirable tool to use in cultivating the orchard. In certain loamy soils free from weeds the pulverizers do very good work, and in some cases the plow can be eliminated.

Is it advisable to seed down young apple orchards or is it better to cultivate them? If cultivated, what is the best crop for such orchards?

It is certainly advisable to cultivate the young apple orchard if it is on cultivatable land. Excellent crops are corn, beans or cabbage. Select the one best adapted to the owner's particular locality. This may be followed by either clover sown alone, the first crop cut and the second turned over, or sown with Canada peas, the latter being cut when green for forage.

Is fall plowing recommended for young apple trees?

It is always better to have the land where trees are growing covered by some crop during the winter. This helps to retain plant food and, when turned in the spring, furnishes vegetable matter. When the soil is plowed in the fall, there is more danger of exposure to the roots and severe freezing. The plowing should be done in the spring, moderately early, before the hair roots have started, which will be broken off with later plowing.

Is it advisable to put small mounds of earth around young apple trees in the fall? If so, up to what age or size?

The practice of mounding young fruit trees with earth in the fall is, on the whole, to be commended. It prevents them from being blown by the wind, protects the roots to some extent, is a partial protection from mice and tends to prevent the water from settling at the base of the tree. Occasionally there will be injury to the trees at the top of the earth, but this is so rare that it does not begin to balance the good obtained by banking. Usually the first three or four years is as long as necessary to follow this practice.

If an orchard is plowed in July or August will it outgrow the injury?

There is always danger in plowing an orchard at this time if the plowing is deep, but if care is taken to plow very shallow as far out as the branches grow there may be comparatively little injury. It is always wiser, however, to plow in the early spring or late in the season after growth has stopped.

Does the ground around the trees need tilling when it is usually covered with material to decay?

This would mean a mulched orchard, and if the mulching is thoroughly done there would not be the need for tilling. Stirring the soil, did the mulch permit, would certainly do no harm and be productive of good.

What would be the result of giving thorough cultivation and fertilization to an apple orchard standing in sod for ten years or more?

Where the first plowing has been carefully done so as not to seriously injure the roots, the orchards have taken on new life and vigor. This is universal.

In plowing an orchard that has been in sod for a good many years is it better to throw the dirt away from or toward the trees?

By all means throw the dirt to the trees. There will be some injury to the roots in any case, and if the earth is thrown away more of them will be exposed, and there will also be a place close to the trunks where water will gather.

Which is the better method with an old apple orchard — continue cultivation every year or seed to clover a part of the time?

I have practiced allowing my orchard to remain in sod about once in six or seven years, and I believe it is a good plan.

What would be your advice as to treatment of an old orchard which has been in sod for twenty years?

Unless this orchard has been pastured by small stock and is doing exceptionally well, unquestionably it would be better to till it. If in late fall when the grass roots are weakest it is plowed very shallow or, better yet, worked up with a cutaway, this will do less injury to the roots than more severe plowing; then a liberal application of stable manure and frequent cultivation the following spring until late July or early August, when some cover crop can be sown to be plowed under in spring. If the trees are covered with rough bark this should be scraped away, and the trunks as well as the entire tree sprayed with lime and sulphur, and then later with lime and sulphur and arsenate of lead to destroy fungi and the various insect pests. Remove all dead and dying branches, making the cuts close to the body of the tree. Take out all suckers and small limbs that are crossing; refrain from taking out many live branches. This treatment should do wonders for the old orchard if the trees still retain their vitality.

Is there any danger of injuring the roots when plowing an old apple orchard, and how can the plowing be done to avoid such injury?

There is serious danger if the orchard has not been plowed in a long time and if the plowing is deep. But if it is done in

the late fall or early spring not to exceed three or four inches as far out as the roots extend, the injury will be slight. In some instances where the sod is not too stiff, the land can be worked up with a cutaway when the sod roots are dormant. If the plowing is done late in the season after the feeding roots have started, there will be very much more injury.

Which would do an old orchard the more good—to plow it in the spring, or invest the same amount of money in barnyard manure and cover the ground?

Different cases might require different treatment. Ordinarily, I would choose the cultural method for the reason that by means of the cover crop, which should follow the period of cultivation, we would get a large amount of organic matter in the soil, which by its decay would increase the productiveness of the soil and indirectly aid in the liberation of mineral plant food.

What is the best thing for apple trees that bear imperfect fruit with brown spots all through?

There is no known best thing in this case. It will probably be wise to follow the Scriptural injunction: “Dig about it and dung it and if it bear fruit well—if not hew it down and cast it into the fire.”

Is it profitable to sow a cover crop in an orchard that is well shaded by large trees?

If the land of the orchard is so thoroughly shaded that nothing will grow, it is evident that the trees are too thick and some of them would better be removed. Then by all means sow a cover crop.

What cover crop is preferred for an apple orchard?

There is no preferable cover crop. If one needs nitrogen, then one of the nitrogen-gatherers, such as red clover, which in most cases in New York State is being used rather than the crimson, or the winter vetch. The latter is increasing in favor. It should be sown about the middle of August, preferably with some other rapidly growing plant, such as oats, barley, rape or turnips. It lives through winter and, although it starts rather slowly in the spring, it can be left very much longer than most plants because, owing to the hairy-like condition of the leaves, it

evaporates less water than the smooth-leaved crops. Where it has never been sown before, it often does not do well without inoculation. For this reason it is unwise to sow heavily until it has become habituated to the soil. If one simply wants vegetable matter without regard to the nitrogen that can be obtained from the air, there is nothing that will make more growth in a short time, particularly on poor land, than corn. This can be drilled in, about a bushel to the acre, over all the ground and followed the same year by rye, which ranks next as a most desirable crop for orchards under many conditions. Care, however, must be exercised in the spring or the rye will grow too rapidly and pump too much water out of the ground. It should never be allowed to stand much beyond the time when the heads appear. Wheat also is a very good cover crop; so are rape and cow turnips referred to above. As a matter of fact, very often many or all of these may be mixed together and, if conditions are not favorable for the growth of one, the others will come on. The price of seed, too, is often a determining factor in selecting the cover crop.

It is assumed that by a cover crop, the questioner referred to those to be sown in the late summer. Best orchard practice keeps the land cultivated until that time. If in spring sow corn or in the early spring, Canada peas. Soy beans and southern cow peas have not been mentioned although they have a value and are nitrogen gatherers, but in most cases in New York State they are of uncertain worth in the orchard and must be sown too early in the season to allow the cultivation to continue as long as it should.

What can we use for an orchard mulch, and which is the best?

For a cover crop use 1 bushel barley, 15 pounds winter vetch, 10 pounds mammoth clover, 1 pound cow-horn turnips.

What kind of a cover crop would you sow in a well-cared-for orchard in which clover will not grow? Why will the clover not grow?

If clover will not grow in an otherwise well-cared-for orchard, the soil is probably acid, and may also lack vegetable matter. Make a liberal application of lime. The winter vetch is next in order to clover as a cover or as a nitrogen-gathering

crop. Whether it would grow well at first may be determined by experimenting in a small way. Rye or wheat will grow on almost any soil and afford winter protection and a large amount of humus-making material, but of course neither will gather nitrogen.



Cover Crop of Buckwheat

How is buckwheat for a cover crop in an orchard?

Buckwheat makes a very good cover crop where a nitrogen-gathering plant is not required. It can be sown early in the season, let go down and reseeded, or sown late and be killed by frost. It is not the equal of rye or wheat or some one of those that live over winter.

Can you seed to clover with buckwheat and get a good catch in an orchard?

Yes, if the trees are not too thick and you do not sow too much buckwheat.

Would it be advisable to plow under mammoth clover in the spring in a bearing apple orchard that has been well tilled and manured and has made a large growth of new wood, or mow the clover and let it lay on the ground? If turned under, when would be the best time to do it?

It would be preferable to turn under the clover rather than to let it lay on the ground as a mulch. In an orchard at South Greece under the charge of the State Experiment Station, for the past three years the plowing under of the crop rather than cutting it as a mulch has given decidedly better results. If

it is turned under, it should be done not later than the first of June. While there will not be quite as large a growth of clover at that time, if allowed to remain longer it will have taken a great deal of the moisture from the soil. If the trees are making sufficient growth, particularly if there is not to be a large crop of apples, it might be better to allow the clover to stand until it is fit to cut and make it into hay, which has a decided value, and the manure from which would go a long way to promote the growth of an orchard or other crop. Then the clover sod could be turned later.

Would it be advisable to sow Canada peas in a bearing orchard and turn in hogs after the grain is developed?

The development of the grain on the peas will draw heavily on the fertility of the orchard, and growing such is not desirable where one is bearing fruit. If there is no fruit, this might be permissible with an old orchard.

Where trees grow such a heavy foliage that weeds will not grow under them, how can a cover crop be grown, or should barnyard manure or commercial fertilizer be used?

Under such trees it is scarcely worth while to attempt a cover crop. Keep the soil well stirred with an orchard harrow having an arm that will work under the limbs. Stable manure is always excellent, but it need not be applied within three or four feet of the trunk of the tree since there are no feeding roots there—these extend far out beyond the branches. One can only determine whether commercial fertilizers will be of value by actual test on his own trees.

Would you advise pasturing hogs in an apple orchard?

The best, most up-to-date method of caring for the apple orchard is to till it in the spring and until midsummer and then grow a cover crop, but on mature orchards, high-headed and favorably located, pasturing with hogs is to be recommended. They will fertilize the trees and to some extent cultivate the ground and also destroy the worm-infested apples. It is a manifest fact that the larvae of the codling moth or railroad worm, passing through the interior of a hog, will never have any descendants.

Is there anything to show that a great number of hens running in an orchard, to the extent of keeping it clear of grass, will injure the trees? In my orchard the trees seem to thrive better than where the sod is thick, being exceedingly thrifty. There is no roosting in the trees.

This is very much better than to allow the grass to grow. The hens will fertilize the trees and destroy the larvae of very many insects, and where cultivation is not feasible the practice is to be commended.

Do cattle do the orchard any harm?

Mature cattle always do harm to the orchard, both by tramping the soil and browsing on the limbs. The orchard survey of Orleans and Niagara counties made by Cornell showed that the orchards pastured by cattle were always less profitable than those where sheep or hogs had run.

Would it be profitable for a small orchardist to keep two hives of bees, even if no honey were obtained?

It is generally conceded that there is a great value in the bee as a help to distribute the pollen in the orchard. This will be more marked years when there is little wind blowing at the time of pollination than other years. It would undoubtedly be a profitable investment to have the two swarms even if no honey were obtained. There would seem to be no good reason why in a normal honey season there should not be enough honey to more than pay for any trouble with the bees.

Will it harm a tree to apply a warm mixture of linseed oil and coal tar, equal parts, to prevent rodents from working at the tree?

Coal tar is rather dangerous to apply. Whether it will be dangerous in combination or not I am unable to say, but would advise caution.

What is the best protection for young trees against mice in winter?

Wire screen one foot wide.

What will prevent rabbits from tearing bark from young trees?

This is a very serious matter, particularly in the Hudson Valley where jack rabbits are numerous. Not only will they eat the bark, but also the lower limbs from young trees. Washing the bodies and limbs of the trees with a thick lime and sulphur paste has proved an excellent preventive. This needs to be repeated at least once during the winter.

Will tar paint keep rabbits and mice from girdling fruit trees? Will it injure trees?

It will probably prevent the trouble, but the remedy is likely to be worse than the disease.

How does tar paper injure the young fruit tree?

When the paper comes in contact with the bark the warm sun in the spring liquifies the tar and injures the tree.

Will apple trees bear where turkeys and chickens roost?

It would kill the trees if continued.

Is it advisable and profitable to remove a number of the apples, and can a larger net yield be secured? At what time is this generally done?

Theoretically it would seem advisable and profitable to thin the apples. In this way larger and more uniform-sized fruit can be secured; but on large trees the work is exceedingly expensive, and it is an open question whether it will pay unless the tree is unusually heavily loaded. The thinning should be done, if at all, as soon as possible after the June drop.

In fertilizing the tree is barnyard manure, commercial fertilizer or cover crops the best?

Stable manure will show more marked results on the trees than anything else; next to that, a cover crop. The value of commercial fertilizers should be determined by experiment in the individual orchard. In many cases no direct results have been obtained by the use of such fertilizers other than nitrate of soda on large trees. This is particularly true where the soil is full of organic matter. Trees root more deeply than most plants, and a comparatively small amount of mineral matter is taken out of the soil in the fruit. They often have very barren years when plant food is stored up, and with their large leaf surface obtain, as do all plants, a goodly amount of their food from the air.

What system of orchard fertilization will help most to give high color to apples?

Fertilizers seem to have little influence on color.

Which is better for young apple trees — cow or horse manure?

They are equally good.

Would you advise putting hen manure in orchards, and is it good to mix sifted coal ashes with it?

Hen manure is an excellent fertilizer for anything. The only advantage of sifting coal ashes with it is to make it more easy of application. It is probable that the hen manure would give better results on corn than on the orchard, where it might induce too much wood growth.

Is any benefit to be derived from sowing salt in a bearing apple orchard?

If so, how much should be applied per tree in an orchard 35 to 40 years old?

Salt has no fertilizing property for apple orchards or anything else. Its only value is a mechanical one, having some tendency to retain moisture and prevent growth of weeds, and this is so slight as to not warrant the expenditure, since equally good results can be obtained by some of the potash salts rich in this material. Whether it will do to sow these salts on the ordinary orchard can be determined only by actual experience.

What is the best commercial fertilizer for apples?

No man knoweth. This is one of the mooted questions — like all crops, something depends on the soil. The only practical answer is for a man to apply to his own orchard nitrogen in the form of nitrate of soda, tankage or bone, phosphoric acid in treated or untreated rock, bone, basic slag, and some form of potash salts, both singly and in combination; and if he finds one giving better results than the other, that is his best commercial fertilizer. (See Geneva Bulletin No. 339 on "Fertilization of Orchards," by U. P. Hedrick.) For old apple trees marked results are being obtained by the use of nitrate of soda.

When fertilize an orchard, in the spring or just before the cover crop is sown?

In the spring; then the tree has the value of the plant food during the entire season. If manure is used, there is also an additional value because of the mulch. Some forms of commercial fertilizers are slowly soluble and when sown early have the benefit of the moisture that is in the ground and the early rains to make their plant food available. When applied late in the summer at the time of turning under the cover crop, there is danger of starting an increased growth in the fall, preventing the trees maturing before winter.

How does fertilizer pay applied on sod as compared to being applied on cultivated ground?

Apply commercial fertilizer to an orchard just before plowing, so as to plow it under and bring it close to roots of trees. On cultivated ground, as for potatoes, apply broadcast and harrow in just previous to planting crop. Nitrate of soda is often applied on the surface of orchards with excellent results, 150 or 200 pounds per acre.

For the same amount of money paid out, which would be the most profitable in an orchard 35 or 40 years old, potash or ashes; what is the best time to sow and how much per tree?

It is an open question whether either would be profitable; and can only be determined by actual test. Potash in potash salts can be purchased more cheaply than in ashes, but the combination in the latter of potash, phosphoric acid and lime is better than any man can make. It may be sown in fall or early spring just as is most convenient. For a tree of that age 25 to 40 pounds of wood ashes, and four or five pounds of potash would be a fair amount to use. Better returns from such trees might be expected by the use of 25 pounds of nitrate of soda. This should be kept well away from the trunk and spread out beyond the sweep of the branches.

Is bone meal a good fertilizer for fruit trees and vines?

Theoretically, yes; practically, one must determine by actual experiment. The effect on vines would probably be more marked than on mature trees. In buying, be sure to obtain actual bone meal from animals recently slaughtered, and not acid rock for animals that perished ages ago, if bone prices are paid. A pound of soluble phosphoric acid has as much nutrition from one as the other.

Is 500 pounds of ground bone too strong for a 30-year-old orchard?

It would do no harm; but the dissolved rock would cost less and would probably give as good results.

Is it possible to sufficiently fertilize an old apple orchard by plowing under cover crops and applying a reasonable amount of commercial fertilizer without using barnyard manure?

While there is nothing that will give quicker and more certain results on an old apple orchard than stable manure, it is certainly true that it is possible and practicable to fertilize

it by plowing under cover crops. The addition to the soil of commercial fertilizers will certainly promote the growth of the cover crop, and in some cases may and does benefit the trees. One would better not invest very much money in commercial fertilizers for orchards until he has demonstrated by a test on alternate rows whether he is getting value received.

How do you regard basic slag for fruit growers?

There is some very strong evidence that basic slag does have a marked effect in producing heightened color on fruit. While this is denied by some whose opinions are valuable, I have seen cases where this heightened color was very marked and could be attributed to nothing but the slag. The fruit from rows of the same variety under practically similar conditions on which no slag had been used, showed great deficiency in both size and color. It is certainly worth experimenting with.

Of what benefit is lime to the orchard?

Indirectly, by increasing the growth of the cover crop.

Is an apple orchard kept in grass continually in need of lime in some shape?

It may be that the soil in an orchard so situated has become acid through lack of air, and that a dressing of lime would be beneficial. It is very much more probable that turning over the sod and giving the orchard thorough tillage would have more marked results. One can only determine by actual experimenting in his own orchard whether lime is necessary or not.

Is any benefit derived from putting coal and wood ashes around small apple trees?

Coal and wood ashes are as different as light and darkness. The former contains about 50 cents worth of plant food to the ton, the latter, if the real thing, contains from 5 to 8 per cent. of potash and $1\frac{1}{2}$ to 2 per cent. of phosphoric acid and also a goodly amount of lime, all of which are of benefit to the soil and may be to the apple tree. The only possible advantage of the coal ashes is as a mulch about the base of the tree.

What is the value of the pea vines for orchards as a fertilizer?

Pea vines from a canning factory are excellent for orchards as mulch, as well as for fertilizer. They contain considerable nitrogen.

Is there any law to compel nurserymen to make good diseased trees?

Not unless something has been specified in the particular contract. It is therefore very important that the trees should be examined, and if found to be diseased returned. Some high-class nurserymen have voluntarily replaced such diseased trees.

Is it a good plan to scrape the trunks of an old apple orchard; if so, when should it be done?

Yes, if the trunks are full of old bark it certainly is desirable to scrape it off, because under it harbor the larvae of many insects, some of which may be destroyed in the scraping, others exposed so that birds may get them, and they also may be hiding places for fungi. It may be done at any time in the winter or early spring, preferably a day when the wood is somewhat damp. If the orchard has been thoroughly sprayed with bordeaux mixture or lime and sulphur wash, there will be little need for scraping the bark for either of these has a tendency to clean up and make smooth the tree trunks.

What hibernates underneath the old bark that the sap-suckers drill after?

Several insects, principally codling moth and borers.

An apple tree had small apples on for three years and is gradually dying. The tree is well taken care of. What is the cause?

It is probable that the cause of the small apples is due to lack of vitality of the tree indicated by the fact that it is slowly dying; and this may be caused by borers several inches below the surface of the ground or by a decay of the root system, either of which may be determined by digging. If the work of the borers has not proceeded too far, the tree may yet be saved, but if the trouble has continued three years, it would seem doubtful.

Is there a more practical way of fighting the apple tree borer than with knife and wire?

No. All methods are only partial remedies, and, while they will be of some benefit by preventing the entrance of the borer, the only sure way is by the knife and wire as suggested.

Which of the case-bearers do the most injury to fruit and foliage? Where do they attack the fruit?

The cigar case-bearer, because of greater prevalence. On the outside, attaching themselves to the skin and causing by the punctures little swellings and sometimes rot.

How and where does the tent caterpillar breed, and what is the method for exterminating it? Will spraying for codling moth kill this pest?

The eggs of the tent caterpillar are laid in the fall in the form of wax-like bands, three-fourths to one and one-fourth

inches in length, about the twigs of the tree. These eggs hatch very early in the spring. Paris green or arsenate of lead should be sprayed on soon after the eggs hatch; it is much easier to kill young caterpillars than old ones. Spraying for codling moth will usually kill the pest, but should not be relied upon where they are abundant, since they will do much damage before the petals of the apple blossoms fall.

What time of year does the female codling moth lay its eggs?

This moth lays its eggs on the fruit or any portion of the leaf or twig shortly



Codling Moth (Natural size except two largest which are enlarged twice)

after the blossom has fallen. In about five days it hatches out and usually attempts to enter the apple at the blossom end. There is a second brood, appearing about the first of August and frequently doing serious damage. These enter the apple mainly from the side. Dr. Felt's work has demonstrated that if the spraying is done so thoroughly as to fill the calyx lobes with poison, there will be few left to make the late brood.

Can the San José scale be seen with the naked eye?

Yes, by a person familiar with it.

Is it true that the San José scale is disappearing?

From the past season's experience, those who have been consoling themselves with the thought that the scale is disappearing must be disappointed. It is unquestionably here to stay and must be persistently sprayed each year. When this is done with intelligence on moderate-sized trees, it is no more to be feared than codling moth.

Is the oyster-shell scale injurious?

Yes, if the tree becomes badly encrusted. Spray in late May or early June with whale-oil soap, one pound to six or seven gallons of water.

What is the bark louse, and how and when should spraying be done for this pest?

The insect commonly known as bark louse is the oyster-shell scale. This insect passes the winter in the egg stage. The old scale insect fills the scale covering with white eggs before dying in the fall. These eggs hatch in the latter part of May or early June — the young appear as tiny white lice. The most effective time to spray for this insect is within ten days after the eggs hatch, usually sometime from May 20 to June 20 in New York State, varying with locality and season. Remedy: Whale-oil soap, 1 pound to 5 gallons of water, or kerosene emulsion, 1 part to 6 parts of water, thoroughly applied to infested trees.



Codling Moth Larva —
much enlarged

What causes collar rot on King trees?

What, for want of a better name, is known as collar rot is quite common on the King, the bark of the trunk of this tree

seeming to be particularly delicate. The causes are doubtless many—winter injury from frost or ice, wounding the tree in any way by the tools used in cultivation or injury from some insect. In each case germs of disease enter the injured places and produce what has come to be known as collar rot. The best known preventive is using care in not forcing too rank a wood growth of the tree itself and extreme care in avoiding injury by man or insects. When the injury is discovered, cut out all diseased wood and cover the wound with a solution of corrosive sublimate or lime and sulphur full strength. Many practice with good results setting Northern Spy or Tallman Sweets and top-grafting them with Kings.

What is good to prevent twig blight?

As a rule twig blight in apple trees is not serious and in most cases it is not necessary to do anything. Where the injury is severe, there is no other remedy but cutting out the affected part. Where it appears in pears it is a very much more serious proposition. In them twig or fire blight has been completely controlled by removing and destroying the blossom or bud clusters turning brown. Here is where the bacteria that cause the trouble find entrance. The removal of these affected portions will necessitate patrolling the orchard at intervals of five days or a week for at least three weeks after the buds appear.

What will kill apple tree canker?

If the canker extends two-thirds around the limb, cut it off and burn; if the disease has extended only slightly in the limb, cut out the diseased part and disinfect with lime and sulphur full strength. If left in the orchard they will affect live tissue.

Will spruce trees around an apple orchard cause fungus or mildew on the fruit?

Not more so than any other trees. No trees should grow near enough to an orchard to prevent thorough circulation of air or to cause a dense shade.

What causes the black specks on Baldwin apples?

Reference seems to be made to what is commonly called the Baldwin spot. The cause of this injury is unknown.

What is the cause and remedy, if any, of brown spots in the interior of apples?

The cause for this trouble is not definitely known. It is being studied by the plant pathologists who, thus far, are of the opinion that they are caused by a rupture of the cells of the fruit. For instance, they are more than likely to occur on trees only moderately loaded. These fruits receive all the nourishment of the tree and grow very rapidly at a certain time; then there may be a sudden change of temperature, when the expanded cells burst, and later on the tissues of the fruit dry up and present the brown or corky appearance referred to. Being apparently a physiological trouble, spraying on the surface has no effect. There is, however, a brown spot on the apple, indicated by a slight pit on the surface, which can be done away with by spraying with a fungicide, but this is not common in this state.



Gasoline Spraying Machine

Would it pay a farmer to spray only the best trees in his orchard, or should he spray all?

If a tree is of sufficient value to continue in the orchard it should always be sprayed, even though it has no fruit, as it may

be troubled with leaf-eating insects which will injure its foliage and affect its fruiting in the future, and it will become a source of contamination to other trees.

Can a small orchard be sprayed successfully with a hand sprayer?

Yes, if care is taken to keep a good pressure on the pump. The cost of a barrel pump is from \$15 to \$20.

Which method can be used to the better advantage, hand or power spraying?

Hand pumps are very good in a small orchard, but a power sprayer is best for a large orchard. One is likely to let pressure go down in pumping by hand.

Would it be advisable to spray apple trees set one year?

If the trees are troubled with plant lice, San José scale or fungi, it will be necessary to spray them the first year, otherwise it would not.

What about the efficacy of the dust spray for the control of insect and fungous diseases?

Dust sprays are not as effective as the liquid ones. Their chief value is on high lands and places where it is difficult or impracticable to use water.

Where can arsenate of lead be purchased and what is the approximate cost per pound? Can it be secured in small quantities?

All dealers in agricultural supplies and spraying material now handle arsenate of lead. In large quantities—100 pounds or more—the cost is from seven to eight cents per pound; in smaller quantities, from one to three cents per pound more. It can be obtained in five-pound packages.

Is dry or powered arsenate of lead as good as the putty form?

The dry arsenate contains a larger proportion of arsenic oxide than the paste or putty form. The latter, however, is to be preferred on account of its adhesive qualities.

In using arsenate of lead, is there danger of poisoning stock if the orchard is used as a pasture?

No; not if the mixture is simply sprayed on the trees. The solution is of a strength sufficient to destroy an insect perhaps as large as the point of a lead pencil, and such stock as usually

run in the orchard would have to take a large amount in order to be affected.

Is it well to put arsenate of lead in the mixture for first spraying when the buds swell?

Yes, for bud-moth, case-bearers, etc.

Is there a law against spraying while trees are in blossom? Is it beneficial to the trees to spray at this time?

There is a state law making it a misdemeanor to spray trees in blossom because of injury to bees. It is of no particular benefit to spray them then, and experiments have shown that sprays applied at this time destroy many of the fruit buds.

Which is preferable as a general spray just before and after blossoming, lime-sulphur with arsenate of lead, or bordeaux with the same poison?

The lime-sulphur, concentrated form, with the arsenate of lead is to be preferred to bordeaux for fruit trees, either just before or just after blossoming. It is cheaper, more easily applied, and does not cause the rust in fruit or burn the foliage as does the bordeaux.

Is the prepared lime and sulphur solution that is sold on the market as good as the bordeaux mixture for spraying apple trees after the leaves are out?

Yes, better. It is just as valuable a fungicide as the bordeaux mixture and very much less liable to injure foliage or rust the fruit. The commercial prepared solutions on the market are standardized, and the majority of them are found to be up to the test. The homemade are equally good, although not quite so strong, requiring less dilution.

Can the manufacturers of lime-sulphur spray raise the percentage in degrees of test by the addition of a larger supply of lime?

No. The addition of salt, however, would increase the specific gravity. Only a chemist's analysis would determine the character of the mixture.

Is it necessary to test the purity of commercial preparations of lime-sulphur? If so, how should it be done?

All the commercial preparations are standardized and lately have been found on analysis to stand up to the advertised strength. It is, however, always wise to test them, and the

hydrometer is necessary to test the dilute mixture. This instrument for testing the density of liquids can be obtained from Bausch & Lomb, Rochester, N. Y., and is now sold by most druggists at a cost of about one dollar.

Can lime-sulphur be successfully made at home?

The concentrated spray can, and is being successfully made by an increasing number of growers. It will not be as strong as the commercial article, but as no freight has to be paid, that is not a serious consideration. The combination of 80 pounds of sulphur, 40 pounds of lime and 50 gallons of water, chemically, has been proved to be the most economical that can be produced. The heating can be done by a steam pipe from a boiler or an iron kettle such as will be found on most farms. The difference in price between the homemade and the commercial article is from one-third to one-half in favor of the former.

Is it the common lime that is used in a lime-sulphur mixture for spraying?

It is very important that all lime for spraying should be fresh burned, of a high grade, analyzing from 90 to 95 per cent. of calcium oxide.

Is arsenite of lime as effective as arsenate of lead when used with lime-sulphur?

Arsenite of lime is as effective as arsenate of lead, except that the latter adheres to the leaves and for this reason is better.

What kind of sulphur would you advise using in making lime-sulphur?

Is ground brimstone as good as flowers of sulphur?

The ground brimstone is just as good if it is equally fine. The majority of the fruit growers who are making their own concentrate are using this.

Is it well to put salt in lime-sulphur spray and what value has it?

The use of salt in lime-sulphur mixture has been discontinued as it adds no value to the mixture.

Would you advise putting any arsenic in lime-sulphur spray when spraying in the early part of April?

If the foliage has started, it is a wise thing to use some arsenate as it will catch the bud moth and the tent caterpillar.

In making concentrated spray will the addition of hot water to make 50 gallons injure the mixture?

If the hot water is used on the lime at the beginning, it will hasten the slaking and increase the heat; but to add it at the close to make up for the lack by evaporation will not give the right mixture. It is very essential that the full amount of water should be used at the outset and go through the cooking process.

When cooking lime-sulphur, is it better to use a kettle or live steam?

This is very largely a matter of personal convenience. Where a fire is used underneath a kettle there will be some loss of the water by evaporation, and a larger amount must be used in order to have the right proportion at the end. With steam there is an accumulation of water from condensation, hence a proportionately smaller amount of water should be used at the outset.

Is lime-sulphur mixture that is two years old and as thick as jelly of any use for spraying purposes?

Probably not. It would be much safer to use a preparation without sediment.

In using concentrated lime-sulphur should limewater be added at the time of spraying?

Its only value is as a marker, indicating how thoroughly the trees were sprayed.

Is not lime-sulphur spray calculated more for San José scale or pests of this description, than for codling moth and similar injurious insects?

Lime-sulphur is a contact spray, and chiefly valuable as an insecticide for such insects as do not eat the foliage but suck, such as the San José scale or plant lice. The codling moth belongs to the class that eat with their jaws, as do the potato beetles. The lime-sulphur has some poisoning properties.

Is lime-sulphur spray safe to use on a tree in full leaf?

This may be used as a spray, full strength, up to the time the red appears in the blossom without injury to the buds and with only slight, quickly vanishing damage to the foliage. After the tree is in full leaf it can be used only in a diluted form — the mixture testing 33 degrees should be diluted 1 to

40; that testing 25, 1 to 25, when it may be applied with the arsenate of lead on foliage of apple and pear trees with safety. Neither peach nor plum trees will stand so much. With them it is wiser to use the so-called self-boiled lime and sulphur.

Is it safe to spray apples with lime-sulphur after the trees blossom?

Yes. When spraying with poison for the codling moth, after the blossoms have fallen, a dilute lime-sulphur—1 to 40 with a mixture testing 33 degrees Beaume, or 1 to 25 testing 25 degrees—is an excellent fungicide and will do no harm.

Will one spraying in the fall with lime-sulphur and one with Bowker's Pyrox be sufficient to preserve orchards from insect enemies?

No. One spraying in the fall with lime-sulphur after the leaves drop would probably control the San José scale, but would have no other effect. The other preparation would be of little value at that time. Pyrox, when used in the spring after the first leaves appear, is an efficient fungicide for all leaf-eating insects. More than one application should be made for best results.

Would you advise spraying a tree which had been scraped, with the same percentage of lime and sulphur as one which had not been deprived of its outside coating?

Yes. No difference should be made. The lime-sulphur is applied not as a protection, but as a destroyer of fungous or insect life which might be on the body of the tree. Scraping off the old bark tends to a greater exposure and should increase the effectiveness of the material used.

Does it pay to spray with the lime-sulphur wash when there is no scab nor likely to be any? Does spraying pay when no scale is present?

It surely does, because no one can determine when scab will make its appearance, especially on varieties that are very susceptible to it.

Lime-sulphur is a fair remedy for the blister mite and also a valuable fungicide. Both of these often exist where there is no scale, and in such cases the lime and sulphur is a practical spray.

How often should this spray be applied for blister mite?

Once; when the buds swell, but before they show green.

Does it have any preventive effect on twig blight, apple tree canker and other bacterial diseases affecting the bark of fruit trees?

The lime-sulphur has a decidedly beneficial effect on apple canker as well as on some other bacterial diseases, but twig blight does not seem to be affected by its use.

For lice on apple trees is it best to put the tobacco extract in the lime and sulphur just after the blossoms fall, or a little later when the effect of it can be seen on the leaves?

To be fully effective the tobacco extract, if applied with the lime and sulphur, would be put on just after the leaves have opened. Later, after the blossoms fall, the lice cover themselves with the leaves to such an extent that it is almost impossible to reach them.

An orchard close to the railroad makes good growth and blossoms, but bears no apples. If this is due to the smoke, what is the remedy? The orchard is pastured.

It may be possible that the smoke from the engine has a tendency to blast the blossoms, but this is doubtful. It may be that the blossoms are injured by the scab fungus; this occurs many times and the injury is attributed to frosts or storms. Spray with lime-sulphur solution before the blossom buds open, and again after the blossoms fall.

What is the cause of the russetting of apples?

In most cases of recent years this has resulted from the use of bordeaux mixture. Since the lime-sulphur spray has been used as a fungicide, this russetting has almost entirely disappeared.

Are there any objections to using hydrated lime in making bordeaux?

Yes; the hydrated lime will make a bordeaux inferior to that made from the caustic.

Is not the bordeaux mixture intended more for insects that injure fruit, such as the codling moth, than for bark insects, such as San José scale?

Bordeaux mixture is not an insecticide at all. Its value is to prevent or destroy fungi. Certain insects, like plant lice, with which it comes in contact may be more or less injured by it, but poison must be used to destroy the codling moth and such insects. With the scale and that family, some caustic or oily material must be used, which, coming in contact with their bodies, fills up their breathing pores.

What is the best mixture for the control of the codling moth?

Arsenate of lead is the best to use. No matter how much is applied, it will not burn the foliage, does not wash off, and will stay in suspension longer than the powdered poisons.

How may we determine when to spray for the codling moth?

The best time to spray is when most of the blossoms have fallen and the embryo apple is upright with calyx lobes open. The work for the last three years of Dr. Felt, state entomologist, has shown that one thorough spraying at this time gave from 97 to 98 per cent. of all sound fruit grown. In one case where the spraying was deferred until two weeks later and then just as thoroughly done, there was only 77 per cent. of worm-free fruit — only 10 per cent. more than trees in the same orchard that were not sprayed at all.

In spraying for codling moth is there any advantage in directing the spray downward from an elevated position so that the poison enters the calyx vertically?

Yes, but with the old orchards it is difficult to get above them. Some nozzles are adjustable, so that when mounted on an extension rod the spray can be applied downward.

What is a means of exterminating San José scale?

The San José scale never will be exterminated any more than will the codling moth or potato beetle or any other injurious insect. Like the poor, it is ever with us. But it can be most successfully held in check and prevented from doing injury either to tree or fruit by thoroughly covering all the parts any time before the blossoms open with a preparation of lime and sulphur, either commercial or homemade; diluted in the former case 1 to 8, in the latter 1 to 5½. In using this remedy it is important to use the hydrometer test, not only for the concentrated mixture, but even more important, for the diluted. The latter should test on the scale not less than 4½ degrees. No harm will result for the first spraying if it should test 5.

Is there a law compelling orchardists to fight San José scale? If so, why is it not enforced?

There is a provision of the agricultural law whereby a man may be compelled to spray his trees for San José scale. It is being enforced in hundreds of cases every year. In a com-

munity where the scale has not found lodgment and a diseased orchard is discovered, it would be wise to enforce the law rigidly. (See Sections 304 and 305 of the Agricultural Law.) In the majority of cases where the scale is established, the orchard must be sprayed to save the crops and trees. The one neglected soon ceases to be a menace because it dies.

Can the San José scale be controlled by summer spraying?

Lime-sulphur strong enough to kill scale will injure the foliage.

Can a large Fall Pippin tree, the top of which has been nearly killed by the San José scale, be saved by spraying the new growth?

If there is enough new growth left to make it worth while, there is no question but that thorough spraying with lime and sulphur will save that growth.

When spraying for scale and blister mite should the trees be heavily covered with spray?

When spraying for the scale it is vital that all parts of the tree should be completely, not necessarily heavily, covered; for the blister mite, all the buds and young growth where the mite harbors. Both these insects must be killed by contact.

What causes the small apples to form in clusters some years?

This is caused by plant lice which early in the season sting the apples and sap their vitality. Spraying with tobacco extract after the buds have broken is the best remedy.

Where can whale-oil soap for spraying be obtained?

The genuine whale-oil soap is not often obtainable. Much that passes for this is made from fish oil and can be obtained from any dealer in agricultural supplies.

Give the formula for kerosene emulsion.

Two gallons of kerosene, 1 gallon of rain water, 1 pound of soap. Boil the soap in water until it is dissolved. While boiling hot turn it into the kerosene and churn the mixture constantly with a syringe or force pump five minutes, when it will be smooth and creamy. As it cools it thickens into a jelly-like mass. Before using on vegetation it must be diluted with nine times its measure of water. The above quantity — three gallons of emulsion — will make 30 gallons of wash.

Does keeping young trees whitewashed injure them in any way?

No injury follows the application of whitewash.

Will painting the bodies of young fruit trees keep off pests?

Various repellents may be applied to the bodies of young trees, which will be of some value in keeping off borers. Few if any other insects deposit eggs there because of the smooth bark. In sections of the Hudson Valley, where the jack rabbits have been injurious, it has been found that painting the bodies and lower limbs of the young trees with a thick lime and sulphur solution has prevented injury by these pests, but it has to be renewed every two or three months.

Which is more harmful, to shake or pick orchard trees, and why?

Unless trees were broken badly or bruised in shaking, there would be no difference.

Would you advise the farmer to pack his choice apples in boxes and ship to some reliable commission merchant, or make two grades and pack in barrels?

In any case it will be advisable to make two grades. With some varieties, such as McIntosh, Spy, Rome Beauty, Spitzenburg, and others of like quality and beauty, it may pay to carefully box the first grade.

How many boxes of apples will a good man grade, wrap and pack in a day? What is the comparative time required to pack a barrel and its equivalent three boxes? What is the estimated cost of the box, including the necessary paper?

Twenty-five to fifty boxes of apples can be packed per day by a good packer, and an expert packer should be able to pack the same number of barrels holding three times the quantity of apples. The box, with paper necessary to put up a first-class package, will cost about one-half the price of a first-class apple barrel.

Which will keep the better in an ordinary farm cellar, late or early-picked apples?

Neither early nor late. It has been fully demonstrated that, whether in the ordinary cellar or in cold storage, fruit of all kinds keeps best which has come to full maturity, that is when the stem parts readily from the branch. Picked earlier than that it inclines to shrivel; picked later, it fails to maintain

its solidity. It is also important that the fruit should go immediately from the tree into storage.

Can apples be grown profitably in Erie County?

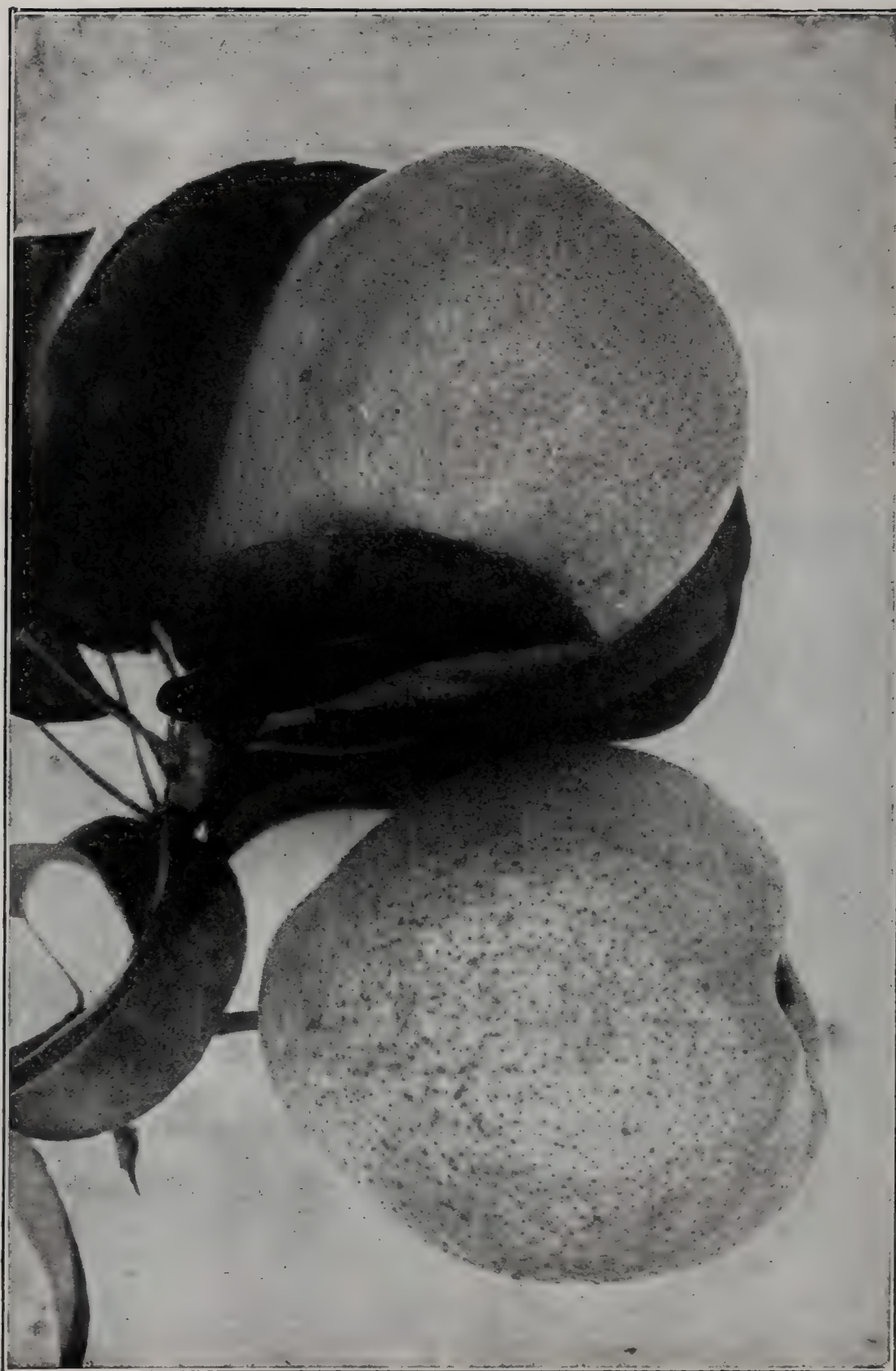
The fact that in many parts of Erie County apples are grown with great profit should be a sufficient demonstration that more will grow in like localities.

When will we reach over-production of apples?

It is doubtful if the over-production of No. 1 apples ever will be reached. When it comes to those of inferior grades, it is probable that we have reached it. I have little fear of the apple business being overdone so long as the bulk of those put on the market are free from insects and disease and are of good size.



Result of Thorough Spraying (Imperfect apples in small heap at left)



The Anjou

PEARS

*"..... the juicy pear
Lies, in soft profusion, scattered round."*

THOMSON

Is it profitable to grow pears as an industry?

On suitable land growing pears is exceedingly profitable. The fact that they are beset by more insects and more subject to injury by disease than many other fruits, has materially reduced the acreage. The thing that is difficult to do is usually that which pays best, and the fact that pear trees are selling for considerably less than apple trees, indicates the general tendency. These insect pests and diseases are now pretty thoroughly understood and by intelligent effort can be successfully combated.

In planting a pear orchard are dwarf or standard trees better, and what variety?

The only pear that does well as a dwarf is the Dutchess, and in the majority of cases this would be as well on standard stock. There are many desirable varieties adapted to particular soils and markets. The following will be found to be excellent, and are named in order of their ripening: Clapp's Favorite, Bartlett, Seckel, Bosc, Kieffer. All are good sellers and good bearers. The Clapp will not stand long shipments, and the tree is more subject to blight than most varieties. The Seckel is exceedingly free from it, but the fruit being small, the expense of handling is very much greater. Bosc is a slow grower, but an excellent variety and a heavy bearer. Kieffers are exceedingly strong and vigorous, and although the price is lower than others named, the regularity with which they bear and their extreme productiveness and hardiness make them fully as profitable as any.

Is it advisable to set the Kieffer pear in rich soil to take the place of five-year-old Bartletts killed by blight in a 700-tree orchard?

While it is true that Kieffers are less subject to blight than Bartletts, they too, will blight under the same conditions.

Seven hundred trees of Kieffers alone are rather too many of one kind, and I should not hesitate to set the same land with Bartletts again. In this rich soil additional fertility might be withheld for the first few years, and perhaps the trees grown in sod for a time. If they are watched carefully and the infected blossom buds removed as they are attacked by the blight, there is no reason why a successful Bartlett orchard should not be established even where one had previously died.

Can Seckel or Bartlett pears be grafted on the Kieffer as a commercial success?
Nurserymen say not, while those who have tried it say it may be done.

The Kieffer is an exceedingly poor stock on which to graft any other variety. It outgrows the scion, and union is very poor. Many orchards might be cited where this has been tried with nearly or total loss of the orchard.

What do you know concerning the Worden Seckel pear?

Does not take the place of the Seckel, and will not sell for the Seckel. Does not keep as long.

If Kieffer pears are thinned on the trees, will they not be as profitable as Bartletts?

They are more certain to bear, but bring less money per barrel; yet yield fully as much net per acre over a series of years.

Is the Lawrence pear a good variety to grow for market?

The Lawrence pear is very hardy and late and of fair quality. It does well in northern sections where other varieties do not thrive. It is not as good a seller in the general market as the Bartlett, Seckel, Clapp's Favorite or Bosc, and where these do well its planting is not advised except for family use.

In draining a pear orchard on clay land, should tile be laid between each row of trees, and how deep?

This will depend on the distance between the rows, how much water there is to be taken away and how impervious the soil is. Except on very heavy soil, if the rows are less than 20 feet apart, a line of tile between every other row should be sufficient. A principle of draining is, that the deeper the tile the more satisfactory the drain. Water always enters

except in very hard soils, from the bottom. The depth must often be determined by the outlet and the character of the soil. They should be laid two feet deep at least, and as much deeper as one can economically go.

How far apart should the following varieties of fruit trees be set — pears, plums and peaches?

Twenty to twenty-one feet is a desirable distance for pears, and most varieties of plums and peaches will do better at that distance than closer.

Would it be possible to transplant five-year-old Bartlett pear trees and have them live? They are now too close together.

This would be attended with more or less risk, and if all conditions were favorable they might live. If one's time was of ordinary value, it would be better to dig them out and set young trees.

Is it necessary to set another variety of pear to fertilize a Seckel?

In many cases this has been thought necessary, but the fact that blocks of Seckels standing alone do bear without cross fertilization would show that it is not absolutely necessary.

Can the dwarf Dutchess pear be grafted to dwarf or standard Beurre de Anjou with success?

It is impracticable to graft a dwarf tree with anything. The root system is very shallow, and aside from the fact that the union between that and the standard is poor, the extra growth of the standard will more than overbalance the root system. Often such trees are blown over by the wind.

How prune a four-year-old pear tree?

No specific rule can be laid down for pruning all varieties of pears under varying conditions. With the exception of the Kieffer, they usually require comparatively little pruning. The outer branches of this variety should be shortened back in order to become stocky and carry the load of fruit. Reducing the number of fruit-bearing spurs is the most practical way to thin them. Only those of large size and fine appearance sell well. As a general rule, with other trees, keep the tree shapely and open enough to permit the entrance of the sun, with a central stalk. It is wiser to have the tree more of a fan shape with many main limbs standing outward, rather

than grow the tree in the vase-shaped form with several large branches standing upward from these. Should the tree be attacked by blight an entire small limb can be removed without injury, whereas if the first form of head is followed, it may be necessary to take out a large limb, destroying much of the bearing wood as well as the symmetry.

Is a growth of three and one-half feet too much for a young pear tree in one season, and how stop the growth?

This amount of growth is excessive, tending to produce too much soft, immature wood, thus making a top-heavy tree somewhat more susceptible to disease. Severe trimming back increases the growth and delays the period of fruiting. To prevent this, do not fertilize heavily nor give very much cultivation. In extreme cases better seed down for a brief time.

On three-year-old pear trees how much new growth would you cut back?

This depends on the variety and how much growth they have made. With Kieffers, often two-thirds. Other varieties, perhaps none at all or just a few inches. The Seckel rarely needs cutting back.

When is the best time to trim Kieffer pear trees to prevent the growth of suckers?

Too severe pruning of any tree when it is dormant will tend to encourage the growth of suckers, for this is nature's way of distributing the sap when the natural branches for which it was intended are gone. Therefore, where there is a tendency to this trouble, the pruning would much better be delayed until late in the season. Ordinarily, however, this variety can be pruned in midwinter without serious trouble.

How trim a Seckel pear tree that has been left several years and has made a very thick growth?

Thin out the outside and top small branches and some of the main limbs if they are too close together.

Which is the best way to make a Bartlett pear tree grow stocky? If the top is cut off suckers will grow, which makes a bad matter worse.

By systematically cutting back every year rather severely, the tree will become short jointed and stocky. However, this will delay fruiting for several years, and my advice would be to prune rather lightly even if the limbs do seem rather slender.

What treatment should be given Dutchess pear trees when the fruit grows rusty and under size?

Dutchess is often grown on dwarf roots and the trees are not as healthy as other standard trees. Each year a few old limbs should be cut out, and young wood grown. Allow plenty of room for perfect development of wood and fruit and leaves.

Would corn planted in a one-year-old pear orchard be more harmful to the trees than potatoes or beans, and why?

Corn has a tendency to shade the trees more than potatoes or beans and also requires a great deal of water. For these reasons, if the season were dry, either of the latter would be preferred; but aside from this, corn is an excellent crop to grow in the young pear orchard.

Would it be a good plan to cultivate an orchard until the first of August, then sow winter vetch as a cover crop to be turned under in the spring?

This is an ideal way.

Which is better to plow under as manure on a pear orchard, crimson clover or vetch; and at what time ought they to be sown?

The general effect of the two are the same—both are nitrogen gatherers and both live over winter. In the majority of places in New York State crimson clover is a fickle plant and does not live over winter. It should be sown not later than the middle of July in order to give it a good start in the fall. The vetch may be sown a month later, and is very much more likely to live on soils to which it is accustomed or where it has had inoculation. Without inoculation it often fails to start. It is extremely hardy, starts somewhat slowly in the spring, but can be left to grow very much longer because the hairy substance on the leaves does not transpire the amount of water that the clovers and other smooth-leaved plants do. Often cover crops are left to grow too long in the spring, and in their growth they pump large quantities of needed water from the soil, thus leaving it dry; and when a large amount of green material is turned in the bottom of the furrow it tends to cut off the capillary tubes, and the ground becomes drier still. One needs to sacrifice some growth in order to prevent these troubles.

Would you advise manuring young pear trees?

Not so heavily as to make a soft growth that will not ripen thoroughly. Young trees may get too much. Mature trees should

have about the same amount each year, and potash and phosphoric acid may be used without danger. Increase the amount of manure from year to year gradually, if the wood ripens well.

When do you apply the ground rock to the pear orchard?

It has never been fully determined whether or not the ground rock (floats) is of material benefit to orchards. There are some marked indications that it is, and one should experiment on his own trees before investing heavily in this or any other fertilizer. It may be applied at any time when most convenient and thoroughly incorporated with the soil. It is slow in its action, because it is an insoluble compound, and one cannot expect as quick results as from some available form of phosphoric acid.

What is best to do with young pear trees just in bearing that are badly infested with the scale?

Thoroughly cover the tree any time before blossom buds burst with concentrated lime-sulphur. That testing 33 degrees Baume, diluted 1-8; homemade testing 25 degrees, diluted 1-5.

Would you use the same spray for pear as for apple trees?

This depends entirely on what you are spraying for. For the codling moth and San José scale, yes. For scab, the lime-sulphur used for apple, slightly diluted. The pear is subject to attack by several insects unknown to the apple, such as the pear slug, psylla, and lately the thrip. These must be combated with a contact spray, either some of the oil emulsions or the tobacco extract. In every case with all fruits, one must spray for the particular thing which is troubling them and at the time when it is most vulnerable.

What is the best treatment for pear psylla? Can it be controlled with a nicotine preparation?

First, scrape off old, dead bark in early spring, under which the larvae winter. This should be burned. Second, spray with lime and sulphur, scale strength, as late as possible before blossom buds burst. Again, with some of the miscible oils or tobacco extract after the blossoms have fallen and the slugs are hatching out. One or all of these three treatments has successfully controlled this pest. The nicotine preparations are the very best for the last spraying for the psylla as well as for plant

lice. The commercial preparations are to be preferred to the homemade, because they are standardized, hence of known strength.

Will lime-sulphur wash control pear psylla when trees are dormant?

If this wash is applied just as the foliage is coming out, it will destroy a good many of the eggs of the psylla and sometimes effectually control it. Usually this spraying alone is not sufficient.

Is not crude oil a good remedy for scale and pear psylla?

Crude oil is an excellent remedy for these troubles, but it is exceedingly dangerous to use because of its liability to injure the tree. This injury may not be apparent the first season, but the cumulative effects are often serious.

What has resulted from spraying pear trees with carbolic acid for pear psylla?

Have heard of its being tried but never have heard it recommended by a responsible authority.

What remedy for slugs on pear trees?

On small trees, use air-slaked lime or fine road dust. On large trees spray with arsenate of lead or paris green.

What is to be done for pear blight?

Pear blight is known to be caused by inoculation of the sap by blight bacteria, which lives over winter under the bark. In the spring the affected limbs should be cut off and the stubs sterilized with a solution of corrosive sublimate. During spring and summer the trees should be watched and new infection removed.

Is the blight spread through trimming?

If the saw or other instrument used in the trimming has cut through a blighted limb, the bacteria of blight can be spread in that way. Where blight is present, it is always wise to disinfect the wound as well as the tool.

Does cultivation cause Bartlett pear trees to blight?

This idea generally prevails. Cultivation is a condition and not the real cause. The blight attacks trees in the soft wood and new growth. Any method of treatment that prolongs this period of growth also prolongs the period of blight infection.

If the blight spores are present, the trees will be attacked and injured whether they are cultivated or not, and many sod orchards have been entirely destroyed from this cause. It is a fact that cultivation will promote the vigor and growth of the tree, and it is unwise to withhold it for fear of blight. In the end the remedy may be worse than the disease.

Does fire-blight in pear trees ever start from the trunk and work up?

It may enter through a wound, otherwise the slight bacteria always attack the tree through the extremities of the branches and work downward. Wherever there is an injury to the tree and the sap filled with blight bacteria exudes, it is likely to be carried by insects of various sorts and so infest the tree as above.

What will prevent pears from cracking when they are about half size?

Usually the cracking of pears is the result of the scab fungus. Spraying with lime-sulphur or bordeaux just as the foliage appears and again after blossoms fall, and perhaps once more, should prevent this trouble.

I have a few Lawrence pear trees about forty years old. For the last ten years the pears on the lower half of the trees have been small and covered with fungus, but the upper half large and clear. What is the cause and what shall I do?

The fungus can be controlled by spraying with lime and sulphur or bordeaux mixture before the blossoms appear and once or twice after. The fact that the pears on the upper half of the tree are free from blemish is unquestionably due to the fact that they have more air and sunlight, both of which are foes to all sorts of fungi.

What is the cause of black spots on the leaves of pear trees, and what is the remedy?

Pear trees are subject to injury of this nature caused by a fungus. It may be pear scab. It can be prevented by the use of bordeaux or lime-sulphur spray.

A dwarf Dutchess pear orchard, about twenty years old, is thrifty and will blossom fully each year. Sometimes the fruit sets and grows the size of large peas; then all blast and fall. It has been sprayed before and after blossoming, cultivated thoroughly and manured, but no fruit.

Prune heavily, plough and cultivate in spring and early summer and spray with a 3-3-50 bordeaux, or dilute lime and

sulphur, with two pounds of arsenate of lead added — the first spraying before blossoms open, the second, soon after blossoms drop, and again three weeks later. Apply the spray thoroughly but lightly so as not to russet the fruit. If the orchard appears unprofitable under this treatment, cut it down. Many dwarf Dutchess orchards have been grafted with results that cannot be called successful.

What is the cause of the bark on an apparently healthy tree bursting?

The bark becomes somewhat dry and, instead of stretching as it would if soft, it cracks. It is a natural and I think harmless process.

QUINCES

Would you recommend planting a quince orchard of five or more acres in New York State, and if so, what varieties, distance apart to set trees and early treatment?

Quinces are profitable when their culture is understood, and several orchards of about this size in New York State have proved so. The best variety is the Orange. They should be planted at least twenty feet apart, cultivated the first few years and sprayed with bordeaux 4-4-50, with three pounds of arsenate of lead added, at approximately the same time that spraying is done for apples. The trees should be watched carefully for the first appearance of blight, and all such branches removed and burned at first indication of the disease. After the first few years the sod-mulch method is often practiced in quince orchards.

Name several good varieties of quinces for New York State.

There is but one good quince for commercial purposes in this state, namely the Orange. Champion and Angers might be raised where late quinces are desired, but only on Long Island. Rays Prolific is a good quince, but the bush is not generally hardy.

Is high or low land better for quinces?

They should never be planted on low, wet land.

Is mulching a quince orchard deeply with straw to keep soil moist a good practice, and when is best to do it? If done in winter would the straw keep back growth in the spring?

Under ordinary conditions, moisture may be best conserved in a quince orchard by thorough, frequent and shallow cultivation rather than by mulching. If straw is used, apply early in the spring. Frozen ground which has been covered heavily with straw will thaw out very slowly, but such a condition will not retard the development of the quince buds in a tree top; this depends largely on the temperature of the air which surrounds them.

What method of breaking up sod in a quince orchard 18 years old would you suggest, and how apply fertilizer, if any?

A quince orchard that has stood about 18 years without cultivation should not be plowed. Harrowing and the addition of stable manure would be proper.

Is clean culture recommended for quinces?

Clean culture is more important for quinces than any other fruit. Cover crops should be used.

What is the quince curculio, can it be easily recognized, and when is the time to spray?

This insect is a snout beetle one-quarter of an inch long, brownish gray in color, slightly mottled with white on back and "broader shouldered" than the plum curculio, and without the characteristic humps which occur on the back of the latter. They injure quinces by punctures which cause knotty fruit, and by egg-laying punctures, the resulting larvae making wormy quinces. Remedy: Jarring the tree, catching the curculio upon canvas and destroying the adults.

Spray with the standard formula of bordeaux mixture with the addition of two or three pounds of arsenate of lead to each fifty gallons of the mixture. Begin spraying as soon as the fruit is set and two or three times later at intervals of two weeks.

At what time would it be best to spray quinces for codling moth?

Within seven to ten days after the petals drop.

Describe the leaf and fruit spot attacking the quince. How can it be controlled and when should it be sprayed?

A fungous disease producing reddish brown spots upon both leaf and fruit and causing the fruit to grow irregular in form. Remedy: Spray with bordeaux 4-4-50 as for apple scab.

What can be done for fire-blight of quinces?

Fire-blight wherever apparent should be cut out, the same as with pears, and diseased branches burned at once. The cutting should be done both above and below the injury, and the wound disinfected with corrosive sublimate.

What is the cause of brown spots on foliage of young quince trees, causing it to drop prematurely? What is the remedy?

A fungous disease which can be prevented by spraying with bordeaux mixture or lime-sulphur solution, the same as for apple scab.

Why do large patches of bark on quince trees loosen and cleave off?

When this occurs and no borers are present it is believed to be caused by adverse winter conditions. Low-headed bushes which afford some protection from the winter may be helpful.



Carman Properly Thinned

PEACHES

"The ripest peach is highest on the tree."

JAMES WHITCOMB RILEY

Name several varieties of peaches of known value for New York.

Carman, Elberta, Stevens, Rareripe, Smock, and Salway, are excellent varieties for this state.

What is the best variety of peach for a section where the temperature reaches 25 degrees below zero?

There is no peach that will grow with certainty where the winters are so severe. Those of the Crosby type will sometimes fruit after this temperature if there has not been previous warm weather to swell the buds.

What is the best yellow peach that ripens before the yellow St. John?

The Triumph.

Assuming that the peach may be successfully planted on clay soil, well underdrained, does such soil retard the bloom?

At Ithaca we are growing peaches on clay and other soils very near together, and do not see any difference in time of blossoming.

Can a farmer grow his own peach trees more profitably than he can buy them?

He can buy them more cheaply, unless he is growing a large number.

Does wintering in the cellar injure the vitality of young peach trees?

Fall digging and wintering in storage cellars seem to be necessary on account of practical considerations, and if properly done does not materially injure the vitality of the trees.

Should young peach trees budded during the summer be transplanted the following spring?

Transplanting at this time may injure the buds.

What size peach trees are best to set if it is intended to head them close to the ground?

Set trees that are one year old.

How should peach trees be trimmed when planted?

They should be cut to a whip from three to four feet in height.

Which is the better way of starting a peach tree — high or low; and will a low tree bear sooner?

Start the tree low. Low or high heading has little effect upon the age of bearing.

Is it well to trim peach trees during the summer of the first year they are set?

Cutting off unnecessary branches will throw more growth to the branches left.

How should peach trees be trimmed and cared for?

Peach tree heads should be started at from 12 to 20 inches from the ground. The vase form is best adapted to New York conditions. This means the removal of the central branches so that sunlight is let in, and a free circulation of air allowed. The four or five main leaders should be severely cut back, and the smaller branches slightly thinned out, so that the fruit will be well exposed to the light and an attractive color and flavor developed. An effort should be made to keep the fruiting wood as close to the ground as practical for easy and economical thinning and harvesting. Trees should be carefully examined for borers, and all trees suspected of being infected with yellows or little peach should be promptly removed. A cover crop sufficient to afford some protection to the tree roots should be found in each peach orchard when it goes into winter quarters.

How would you trim a three-year-old peach tree that had made from 20 to 30 inches growth last year? These trees have had the best of care since setting.

Take out as little of the wood as possible and keep the head of the tree fairly open.

How severely should four and five-year-old peach trees be pruned?

This depends entirely upon the amount of wood and fruit the trees are producing. If there is no set of fruit buds, it will be wise to cut back severely in order that new wood may be produced. Peaches set only on such wood.

What can you say as to the desirability of dehorning peach trees?

Dehorning is not usually desirable, except under conditions set forth in last answer.



Well-laden Peach Tree on Gravelly Soil

What special care is required for the peach orchard during the winter?

It is usually the most convenient time to do the pruning. Grass or other rubbish should be taken from about the base to prevent injury by mice.

Will a peach tree that has not been budded bear fruit? Do peach trees ever come true to name from pit?

They will usually bear a small white peach. Some varieties come true from the pit in a few cases, but they cannot be depended upon.

Would the whip graft be good to use on seedling peach trees?

No; budding is better.

What are the best tools with which to cultivate a low-headed peach orchard?

A spring-tooth harrow with a false section in the center, or an extension cutaway harrow, depending upon the nature of the soil.

What is the best cover crop for a peach orchard?

A cover crop for the peach orchard depends upon the soil and its previous treatment. Barley one bushel, cowhorn turnips one and one-half pounds, vetch 30 pounds, per acre, is usually good. If the trees are bearing heavily or not making much wood growth, use clover or vetch, both nitrogen-gathering plants.

What is the objection to planting potatoes in a young peach orchard?

There is no serious objection to planting potatoes in a young orchard, but they are not as desirable as corn or beans.

Is irrigation for peaches practicable in this state?

Our rainfall is usually so well distributed that irrigation would not pay for cost of the plant.

What is the cause of gum forming on the limbs of peach trees?

This is usually caused by the shot-hole borer, which will kill all trees that are weak or not growing strongly.

Is it possible to prevent borers from injuring peach trees, and what will kill them? Is salt or tar of any use?

There is no preventive, and the only sure way is to dig them out. Scrape the earth away from the base of the tree in order to note the chips made by the borer. Salt would be of no value. Coal tar will lessen the number, but it may injure the tree.

What spray should be used for curculio, and at what time?

Spray with arsenate of lead, three pounds to 50 gallons of water, immediately after the blossoms drop, and again two weeks later; or two pounds of arsenate of lead may be added to each 50 gallons of self-boiled lime-sulphur mixture. (See control of brown rot.)

What causes peach yellows in an orchard, and is the disease transmitted by means of the pits? Is there any known remedy?

The cause of peach yellows is not known, nor how it is transmitted. There is no known remedy. Pull and burn the trees as soon as they show the disease; they cannot be saved. A fresh tree may be safely set in the place where one affected with yellows stood.

When is the best time to spray peach trees for leaf curl, and which is better, lime-sulphur or bordeaux mixture?

Lime-sulphur, 1-11, or bordeaux mixture, 5-5-50, applied before the buds start will control leaf curl. Use the one most convenient to obtain; neither will injure the trees.

What causes the blighting at the ends of peach twigs when the peaches are about half grown?

Brown rot causes blighting of the twigs beyond badly affected peaches.

What will control brown rot?

Self-boiled lime-sulphur applied three times at intervals of about ten days, beginning just after the blossoms fall, will control brown rot.

To prepare 50 gallons of this spray material, place in a barrel eight pounds of fresh stone lime with water to cover the lime and, when slaking begins add eight pounds of sifted or pasted sulphur. Stir the mixture while slaking continues, for five minutes, adding small amounts of water to keep the mixture free. At the end of five minutes add enough cold water to make 50 gallons; this will cool the mixture and prevent the further formation of lime sulphids. Some slow-slaking lime may require longer than a five-minute interval before dilution, but the above is sufficient with a brisk, active lime. Strain out the lumps of lime. Lumps of sulphur should be worked through the sieve.

Do those peaches which turn black and remain on the tree injure the following crop?

Mummies on the trees do not have as serious effect on the following crop as was formerly supposed. It is wise to remove them, as falling on the ground in a wet time, spores have been found growing from them.

Can commercial lime and sulphur be used in place of a homemade wash for spraying peach trees after the blossoms drop?

Peach foliage is subject to injury by bordeaux mixture or the boiled lime and sulphur mixtures, even when much diluted.

Is it safe to use bordeaux on dormant peach trees?

Bordeaux mixture 5-5-50, applied before the buds start, will not injure the trees.

Will snow wash lime-sulphur spray from trees?

Snow or rain will wash off very little lime and sulphur or bordeaux.

Would you advise spraying peach trees set one year?

This is not necessary unless they are badly infested by scale or are being injured by an attack of leaf curl or plant lice.

Is it advisable to whitewash two or three-year-old peach trees, and if so at what time?

The benefit from whitewashing is probably not enough to pay for the labor.

What is the best package for marketing western New York peaches?

Most of the peaches are marketed in one-third-bushel western New York baskets or in the 16-quart Jersey basket. The latter style is more popular, and a movement is on foot to make the 14-quart Jersey style basket standard for New York.

What has been the experience in regard to wrapping peaches and selling them in bushel boxes?

Western peaches are marketed in bushel boxes, unwrapped. We have wrapped some, but this package requires a special market and high prices.



Soy Beans as Cover Crop for a Peach Orchard

PLUMS

Please suggest some good varieties of plums of known value for the different sections of the state.

The best plums for New York are: Bradshaw, Grand Duke, Arch Duke, Monarch, Reine Claude, German Prune and Italian Prune; to these may be added Burbank and Abundance if Japanese sorts are desired.



The Burbank

Will a Japanese plum do well on a European or American plum?

No.

Can plum trees be grafted, and if so, will the young trees that spring up near a parent tree be good stock on which to graft?

Plum trees are grafted with difficulty. I doubt whether the young trees which spring up in a plum orchard would make good stock upon which to graft other varieties.

Can you graft plums on apricots?

Not with success.

Will plum trees survive a good trimming?

Plum trees need comparatively little pruning, but may be pruned severely without fear of killing them.

Should plum trees be trimmed out in the center?

The center should be left.

Does the Damson need much trimming?

Damson plums need very little pruning.

What causes plums to drop before they are ripe?

Plums usually drop because of adverse weather conditions at blooming time, but sometimes because of lack of proper pollination.

When a plum or cherry tree, apparently thrifty and old enough and large enough to bear fruit, bears none, what should be done to make it bear?

The failure of the stone fruits to set very often comes from a lack of cross-pollination. Plant some other variety or graft into the non-bearing trees some variety to secure cross-pollination. In many cases, however, such failure comes from causes which cannot be controlled.

What is the best way to combat curculio on prune trees?

The curculio may be controlled by spraying with arsenate of lead at the rate of two pounds to 50 gallons just after the blossoms have dropped, and again two weeks later.

What is the trouble with plums that when nearly ripe and hanging in great clusters, one will begin to rot and of course in time this affects them all? What is the cure?

The trouble is brown rot, a fungous disease, which may be partly controlled by spraying with self-boiled lime and sulphur, but no spray has yet proved wholly satisfactory.

What is the cause of black knot on plum trees, and the remedy?

Black knot on plum trees is produced by fungous spores which attach themselves to the tree from others affected in like way. The only remedy is to cut out the affected parts, treat the places with corrosive sublimate solution and remove or destroy all hedgerows and trees from which the fungus can propagate. This course, persisted in, destroying the source of infection, will entirely do away with the difficulty.

Should plum trees be sprayed the same as apples and pears?

Plums require spraying for leaf spot and fruit rot. Spray with bordeaux just after the blossoms drop, and again when the fruit is two-thirds grown. Later spraying should be avoided because of danger of spotting the fruit. These two sprayings will partially control leaf spot and also slightly reduce the loss from rot, but will not give complete protection against either disease.

Will the Fellenberg Prune do well on sand?

The Fellenberg Prune prefers a heavier soil than sand, but thrives on well-fertilized soils of any kind.

Is the York State Prune a good commercial variety? Is it more subject to insect attack than the German Prune?

The York State Prune is the Italian Prune. The variety is not more subject to pests than the German Prune.





"The cherry is becoming more and more profitable in New York."

CHERRIES

*"..... the valley stretching for miles below
Is white with blossoming cherry trees,
As if just covered with lightest snow."*

LONGFELLOW

What is the best fruit tree to grow on a steep hillside in good sod?

It is questionable whether it will pay to set any tree under these conditions; certainly it is not conducive to the most profitable production. It is not worth while to set fruit trees on any hillside so steep that one cannot get on the land and spray the trees, and setting in sod is only permissible on fruit land that cannot profitably be tilled. Cherries will do better in sod than most other fruits and probably need less spraying. Next to them, apples.

Is a cherry orchard a profitable investment?

The cherry is becoming more and more profitable in New York. In some plantations it yields higher profits than most other fruits — much depending upon the location.

What variety of sour cherries would be advisable to set?

The Montmorency is the best sour cherry, though Early Richmond should be planted for an early sort and English Morello for a very late sort.

Is the sweet cherry as profitable as the sour?

The relative profits depend entirely upon the location and the market.

What do you think of the Windsor cherry? Is it an early bearer?

The Windsor cherry is one of the best of the sweet cherries. It comes in bearing as early as any.

When purchasing cherry trees, how tell which root they are budded on?

There is no way of telling on what stock cherries are budded.

At what distance apart should the Montmorency cherry be set?

Montmorency cherries should be set 18 or 20 feet apart — the farther distance in heavy soils.

When is the best time to graft cherry trees?

Cherry trees may be grafted early in the spring before the leaves come out, though the operation is seldom satisfactory.

How should an Early Richmond tree be trimmed?

Cherries need very little pruning. When set out the surplus branches should be removed, leaving the central leader and four or five main branches. Do not cut these back. In subsequent pruning only crossed and injured branches need be removed, and there need be no cutting back.

How soon after setting should the Montmorency cherry be allowed to bear fruit?

Cherries may be permitted to bear three years after setting, though no harm will come if a few cherries are borne the second year.

Would it be advisable to use nitrate of soda on cherry trees that have been set one year; how much and how applied?

I doubt the advisability of applying nitrate of soda to young cherry trees. If the soil is sandy and the trees are making slow growth, an application of a handful of nitrate of soda about each tree soon after growth begins in the spring would prove sufficient.

Are rose bugs apt to eat cherry trees if set on sandy ground?

Rose bugs will do some damage to cherries when the bugs are plentiful as they usually are in sandy soils. It is doubtful if it is worth while trying to combat them with any known remedy.

How can we control black knot on cherry trees?

Black knot on cherries and plums can be controlled only by cutting the knots out as soon as they appear.

How long will the infection which causes black knot stay in the ground?

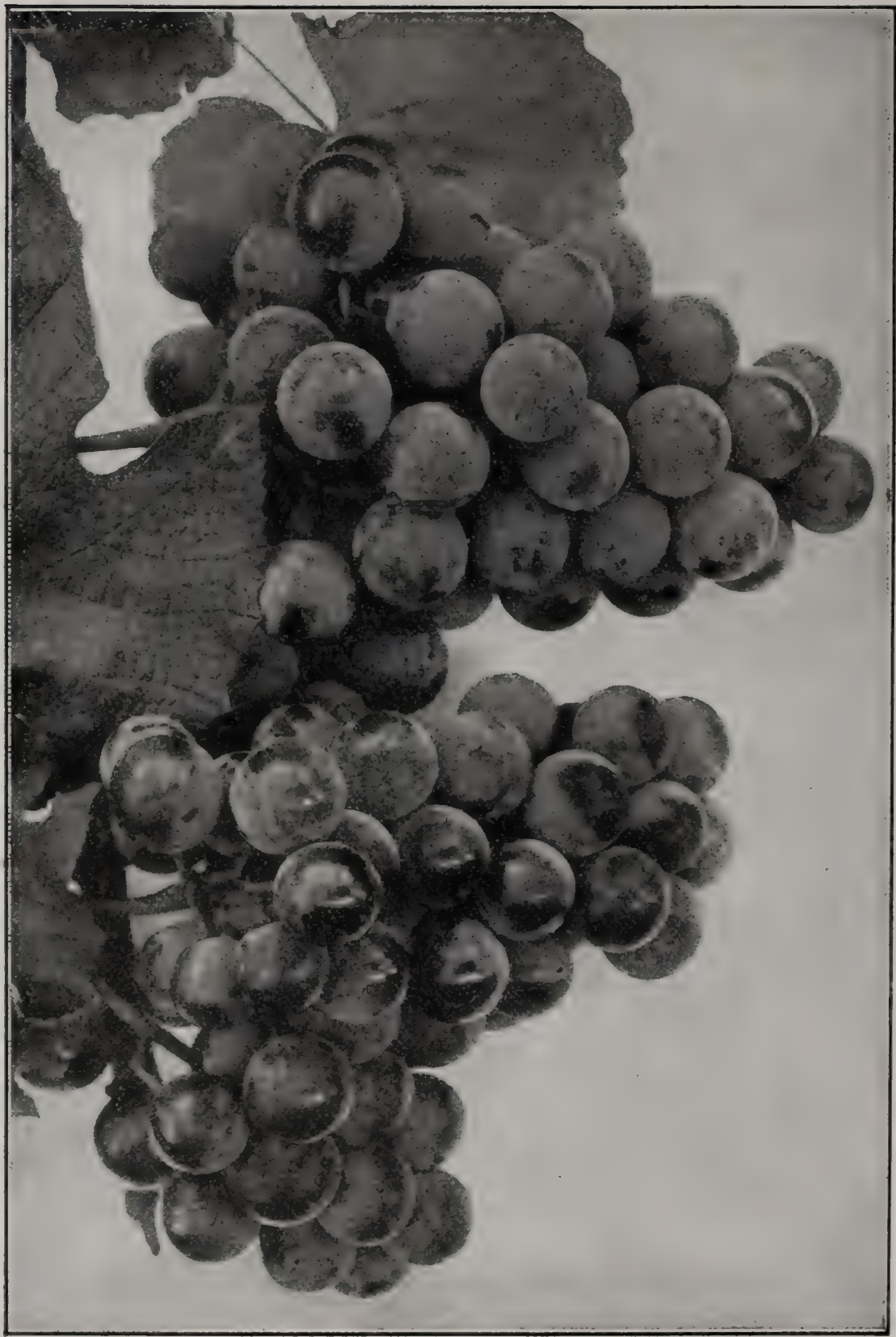
It is not certain that the spores of the black knot stay in the ground, and it cannot be said how long they will retain life, either in the ground or elsewhere.

Why do cherries decay on the tree just before ripening, and what is the remedy?

The decay is probably due to a fungus, brown rot, which can be partially controlled by spraying.

How old should a cherry tree be when first sprayed?

Cherry trees should be sprayed as soon as they come in bearing. If leaf spot is very prevalent, they should be sprayed the same season when set.



The Barry

GRAPES

“With purple clusters blushing through the green.”

POPE

What is the best age at which to purchase grapevines, and at what age would they come to profitable bearing?

Buy one-year No. 1 vines. They will give a fair crop the third year and a profitable one the fourth.

Is there any objection to planting a No. 1 two-year-old grape root?

This is to be preferred to a No. 2 one-year, and a No. 1 one-year is much better than either.

Would it be wise to transplant an eight-year-old grapevine?

It might be done, but the result is uncertain. It would be better to grow another vine, since the pruning necessary with transplanting will hinder the growth, while with a new vine a profitable crop can be obtained in three years.

Give varieties of grapes of known value adapted to the different sections of New York State.

See Bulletin 315 of the Geneva Experiment Station.

Which is better for a grape arbor, wood or wire?

Slats are to be preferred for a home arbor, the wire will sag a little. For a large vineyard the slats are too costly.

How far apart shall we plant rows of grapes and how close in the rows?

Opinions vary as to distances for setting vineyards. Rows eight and one-half feet apart and vines eight feet in the row are very satisfactory for the Concord.

How is a grapevine propagated?

Commonly the grape is propagated from hard-wood cuttings made from the growth of the preceding year, that is one-year wood. The canes are cut in the fall after the leaves are off and then cut into two or three bud lengths. They are bundled and buried in the ground, butt end up, so deep that they are not affected by changes. The following spring the cuttings are set in trenches two or three inches apart and covered up to the top bud.

What is the best way and the best time to trim grapevines?

The variety will largely determine the best system to be used in training grapes. They may be trimmed any time after the leaves fall. (See Circular 16 of the Geneva Experiment Station.)

How should grapevines be trimmed the year after setting?

They should be cut back to two buds, and no fruiting wood tied up.

Is it well to trim old vines and leave only two or three eyes?

It is sometimes necessary to leave only very few buds on certain vines. This is true of those that have become weakened by neglect or the ravages of insects. Some vineyards have been cut back to stems only, in attempting to renovate them.

What is the best way to trim grapevines set last spring?

This will depend somewhat on the form of vines desired. In any event it is wise to run one wire two feet or two and a half feet from the ground to which the young vine can be attached. There may be three main branches coming from the bottom, to be attached to other wires put up later, or better yet, one main branch from which arms can be run at right angles, and from this, second and third branches extending to other wires with arms. This is known as the Niffin or the umbrella system, and is the best because more perfect clusters are obtained.

How trim grapevines set two years?

Trim to not over two canes, depending on the vigor of the vine as shown by the growth made. Many vines probably should not be left with over one. The number left will also depend upon the system of training to be used and the height of the wires.

When a large stem (or arm) of a grapevine is cut off, should something be done to prevent a fungus entering the cut?

It is not necessary to treat cut surfaces made in trimming out large stems or arms of grapevines to prevent the entrance of fungus spores.

Is it advisable to renew grapevines back to the ground?

It is advisable, and in many cases very necessary, to renew grapevines back to the ground. Old stems and arms offer much interruption to a good sap flow and are liable to become diseased.

When is the best time to lay down grapevines?

Just as soon as the vines can be trimmed in the fall and before the ground is frozen.

What is the best method of restoring fertility to a vineyard where the soil is clay and very deficient in humus?

Stable manure or green manures are the methods for restoring humus to soils. Mammoth clover, alsike, buckwheat, rye, wheat and cowhorn turnips are some of the proven green crops for this purpose.

Is there any loss to our vineyard other than the wash by not growing a cover crop?

In late summer on the warmer soils, nitrification is taking place, but the vine at this time is not using much nitrogen. If the soil be open this will largely leach away, while a cover crop growing at this time will make use of much of this nitrogen and when turned under will return it to the vine.

Is there any danger of overdoing the growing of cover crops with grapes?

Not at the present time, since few growers are taking advantage of its possibilities and these but spasmodically.

Can one plow deep enough to thoroughly cover a green crop in a vineyard without damaging the roots?

The kind of soil and its previous care will largely determine how deeply it can be plowed. Green crops can be plowed under without injuring the vine roots if the vineyard has had proper working previously.

What is the best cover crop on a slope that washes considerably, with soil too heavy to grow clover; and will it grow sufficient organic matter to supply the required amount of humus for the vineyard?

Wheat and cowhorn turnips, one bushel of the former to one pound of the latter, make a very desirable cover crop for a heavy but well-drained soil. One seeding will not supply the desired amount of humus.

If vineyard soil will grow a rank growth of oats, will it grow clover if lime is used? Will clover hold the soil from washing better than oats?

Most vineyard soils, if not wet, will grow Mammoth clover if limed. Oats or rye are very good crops to precede clover in the vineyard. Clover will hold the soil from washing better than oats.

When clover is sown in a vineyard how long should it grow in the spring to get good value from the roots?

The maximum benefit is probably obtained by plowing under clover just before it blooms, but it cannot be left this long in the vineyard. Much good can be obtained by plowing it under when it reaches four to six inches.

Would sweet clover be good to sow in a vineyard where it is doubtful if other clovers would do well?

There is no information at hand that sweet clover has ever been sown in a vineyard. It has been used in renovating washed soils, and it may have a future in the vineyard.

Is the growth of sorrel in a vineyard an indication that it needs lime?

Liming has had no effect upon the growth of sorrel in the vineyard. The general supposition is that sorrel indicates an acid soil, but the litmus test before liming with soils adjacent, in one case with sorrel growing and the other without it, gave the same response.

Which is the better way to put manure on grapevines — around the hills or scattered broadcast in the rows?

In applying manure to the vineyard by all means broadcast it. If spread around the hill, it never becomes well spread by subsequent cultivation, as is commonly thought. Manure applied around the hill induces rooting in that immediate locality, with the result that the root system does not occupy its allotted space and, hence, does not utilize its proper water and food supply.

What chemicals should I use in lieu of barnyard manure to fertilize my vineyard, and how and when should they be applied? The soil is clay, quite heavy in places, while other parts of the vineyard are affected by erosion.

It is difficult to give a fertilizer for your specific vineyard. One made up of 100 pounds of nitrate of soda, 400 pounds of dried blood, 300 pounds of acid phosphate and 200 pounds of sulphate of potash, per acre, is worth a trial.

If old vines grow plenty of wood with what shall I fertilize for fruit?

Probably phosphorus supplied through acid phosphate or bone meal, and potassium through sulphate or muriate of potash.

What is your opinion of sowing nitrate of soda on vineyards, and at what time?

Nitrate of soda will produce wood growth in the vineyard. It should be sown when the shoots are from five to eight inches long on open soils and earlier on heavy. Two applications at a three-weeks interval give results on the lighter soils.

Will kainite stop grapes from shelling? If so, is it the potash or the other substance in the kainite?

Kainite or potash in some form is supposed to stop "shelling," although there are no authentic proofs that such is the case. Stable manure is also reported to have given the same results.

What can be done with the grape beetle which destroys the tender buds in the spring?

The question refers to the grapevine flea-beetle which is of a steel-blue color and for this reason is also called the "steely beetle." There are several means of control — spraying, hand picking and clean culture. Spraying the grape buds about the time they begin to swell, using arsenate of lead 3 pounds, molasses 1 gallon, water 50 gallons, is an effective method. It is advisable to spray the vines again in June when the larva (a dark colored grub about one-quarter inch in length) is feeding on the foliage. Any arsenical poison will be found to do the work, but arsenate of lead, 3 pounds to 50 gallons of water, is recommended. Hand picking is practiced with success in many vineyards. Usually the beetles are found infesting restricted portions of the vineyard, especially near waste or woodland in which the adults have hibernated. This condition makes it practical to have boys jar the beetles into vessels having a shallow layer of kerosene in the bottom, which kills them. Clean culture in this answer refers to destroying rubbish and cleaning up waste places in which the beetles hibernate.

How shall I work the ground between the rows or plow it to best stir-up around the vine and kill the root-worm's eggs?

The grape root-worm does not lay its eggs in or on the ground, but on the canes. The pupae are destroyed by cultivating the

soil in June. Our present recommendation is to perform your regular cultivation and spray for the grape root-worm when the beetles are feeding on the foliage. Use arsenate of lead 3 pounds, molasses 1 gallon, water 50 gallons.

If no insect is injuring the grapes, should they be sprayed with arsenate of lead or white arsenic with or without lime and molasses, as a preventive?

No. Decide what is injuring your vines and then apply the proper remedy.

At what time and with what preparation should spraying be done to prevent wormy grapes?

So-called "wormy" grapes are due to infestation by the grape berry moth. There are two broods each season. The larvae of the first brood appear on the young grape berries soon after the setting of the fruit; they spin webs and join the berries. At this time the caterpillars feed externally, and thorough spraying of the cluster with arsenate of lead 3 pounds, whale-oil soap 3 pounds and water 50 gallons is very effective. This is in fact the most important spraying. The second brood appears in July, and spraying when the young larvae hatch will kill many when they attempt to eat into the berries. Use the same material as for the first spraying. Destroy all wormy fruit as this eliminates the moths which would lay the eggs next spring.

Is it possible to establish by law a uniform-sized grape basket?

It is possible to establish by law such a grape basket. This has been done with many other fruit packages and measures in New York State.

CURRENTS

What are the best currants to plant?

There is a great difference of opinion on this point. My own preference is for Wilder over all others. The next best are probably Perfection, Red Cross, Pomona, North Star, Faye and some others. To my mind, Fayses run too small at end of the cluster, and Cherry has too short cluster to compete with others.

What can be done if currant sets heave out?

If currant sets (I presume cuttings are meant) heave out, I know of nothing that can be done except to replant if found before exposure has dried them out. It is not a common practice to put out cuttings in the fall. If they are cut in the fall, which is perhaps best, they might better be buried over winter and planted out in early spring. If, on the other hand, the questioner means that young plants heave out the first or the succeeding winter after being set, then the chances are that that ground on which they are set is not properly drained, and they will not do well in such a location.

What care should currant bushes have, when and how trimmed, etc.?

Currents should have a well-drained, rather rich soil. The soil should be thoroughly prepared, then marked either 5 by 5 or 4 by 6 feet. The bushes should be well cut back at time of setting. On rich soil so much growth will be often made the first few years that many are apt to be topheavy, especially if well loaded. All branches that promise this should be shortened-in sufficiently to avoid their laying on the ground when full of fruit. Aside from this, only weak canes and enough healthy ones to give the bush light and balance should be removed until they are three years old. After that the oldest wood should be cut out each year in addition.

They need good feeding and good culture. Good feeding means enough nitrogen (preferably stable manure or cover crops) to give a satisfactory growth of wood and color of foliage, potash and phosphorus in rather liberal amounts. For cultivation, plow up to them as soon as the fruit is picked and

cultivate in a cover crop. This should be plowed away in the spring as early as possible, and cultivation given both ways. Currants also need spraying in early spring with lime-sulphur for scales, and later for currant worms, either an arsenical poison or hellebore. It is necessary also to spray sometimes with bordeaux for leaf trouble.

How can we keep the worms off currant bushes?

Currant worms may easily be kept in check by a thorough spraying, as soon as they appear, with bordeaux mixture containing from two to three pounds of arsenate of lead to 50 gallons of the mixture.

My currant bushes are covered with flies which sting the new leaves; the leaves then turn red and are covered on the under side with small aphids which seem to suck the juice, and the leaves drop off. What can I use to get rid of these pests?

The leaves which turn red and wrinkle up at the tips on young growths of currant bushes are usually infested with aphids. A thorough spraying with tobacco mixture similar to "Black Leaf Forty," diluted one to 800 parts of water, will control them. Care should be taken to hit the aphids upon the under surface of the leaves. In some instances the infested tips can be dipped in a pail of the above mixture and the aphids destroyed in that way.

What will prevent currants from dropping soon after setting?

There are a number of things that cause currants to drop, and the first step in the matter of prevention is to find out the cause. Some varieties are poor pollinizers, others fail to properly pollinize (as was the case the past season) because of heavy rains when in blossom. Blossoms are also sometimes blasted by frost. All of these troubles are practically unavoidable. If, however, it is caused by fungous troubles, it is rather easily overcome by proper spraying.

What is the cause and remedy for blisters or red, rust-like spots on currant leaves?

Reddish, blistered, puckered currant leaves are usually the indications of the work of green lice on the under side of the leaves. Spray with whale-oil soap, using one pound to five gallons of water. The spray must come in contact with the insect.

GOOSEBERRIES

What is best soil for growing gooseberries?

Soil not too rich in nitrogenous matter. A well-drained, medium heavy loam, not too clayey, is usually best for this fruit. Several kinds of soil grow gooseberries well.

What is the general cultivation of the gooseberry? What kind is the best for market? What price per root?

Plant the bushes three feet apart each way. The culture consists of thorough cultivation of the ground early in the spring, stirring the soil at intervals. A cover crop may be sown soon after the berries are harvested. The plants should be sprayed with bordeaux containing an insecticide, as soon as the worms appear. English gooseberries may require several applications of sulphide of potassium (1 ounce to 2 gallons of water), for mildew.

Downing is the leading American variety; Industry, White-smith and Chautauqua are also grown considerably. The price of the plants depends on the season, the variety desired and the age of the plants. In 1912 one-year plants were listed at from \$3.50 to \$8 per hundred.

Is there any remedy for the fly or insect that stings the gooseberry and makes it wormy, causing it to drop?

There are two insects, known as the gooseberry fruit-worm and the gooseberry midge, which cause the gooseberries to become wormy and to drop prematurely. The berries ripening or dropping prematurely should be gathered and destroyed. The trouble will also be lessened by spraying the bushes thoroughly, as soon as the fruit has set and commences to swell, with bordeaux mixture containing 2 pounds arsenate of lead to 50 gallons of water.

RASPBERRIES

"..... the quietly elegant raspberry."

CHARLES DUDLEY WARNER

Please suggest several good varieties of black raspberries, red raspberries and blackberries for the different sections of the state?

It should be well understood that all varieties of raspberries or blackberries do not do equally well even in the same section of the state. The following varieties, however, are worthy of test where their value is not known. Black raspberries: Cumberland, Diamond, Eureka, Gregg, Hilborn, Palmer. Red rasp-



Superlative

berries: Cuthbert, Herbert, June, Loudon, Marlboro, Perfection. Blackberries: Agawam, Ancient Briton, Blowers, Eldorado, Mercereau and Snyder.

Which is the more profitable to grow for market — red or purple raspberries?

Except for special markets and canneries, red berries are most profitable. They generally find ready sale on any market, while purple berries, because they do not ship or stand up well and also owing to their unattractive color, are generally in little demand.

What is the best red berry for the Hudson Valley — hardiness, quality, productiveness and market value considered?

The best red berry for the Hudson Valley in the past to my mind has been the Marlboro. At present there are at least two new seedlings of the Geneva Experiment Station that are far superior to anything we have had heretofore. Unfortunately, no one that I know of is yet offering them for sale.

What is the difference between the Plum Farmer and the Kansas?

The Kansas is one of the best black raspberries grown — early, large with smooth black finish. The Plum Farmer resembles the old Palmer Early more than the Kansas.

If one has a good variety, is it just as well to raise the plants for resetting a berry field?

If a person has a variety that meets his requirements, his only sure way of keeping it is to raise his own plants, and in every planting he can improve on what he has by selection.

Can wild blackberries and raspberries be cultivated?

Yes. The young plants may be moved to the garden, and if given good care should do well.

How should one acre of ground be prepared for blackcaps?

If possible set on a clover sod, manure, then plow deep, work the ground thoroughly until finely pulverized. After one or two heavy rains cultivate again and mark for plants.

How far apart, when, and how should raspberries be planted?

The questioner does not state whether this refers to red, black or purple varieties, or if they are to be set for family use or on a commercial scale. For fancy fruit on a com-

mercial scale with the minimum amount of hand labor, set red varieties in hills — Marlboro type 5 by 5, or at the least, 4 by 5 feet, with one foot more for the Cuthbert type. Black and purple varieties should be set in rows six feet apart and plants four feet in row. Red varieties may be set in fall or spring if the plants are dormant; spring planting for black and purple varieties is preferable.

How many canes should be left on red raspberry bushes, and how far apart should they be planted?

This depends almost entirely on the condition of planting. If the planting is in good, thrifty condition, from three to five if planted in hills; if planted in hedge, it depends also upon the width of row and variety. Varieties of the Marlboro type will carry more canes on a given space than those of the Cuthbert. Probably from 12 to 18 inches apart in the row would be as near as one would dare come to laying down hard and fast rules. Every planting should carry the number of canes that would grow and ripen properly, having them always stand far enough apart to develop and ripen a load of fruit.

The ground should be of fair richness and well prepared, then furrowed fairly deep. Plants will do much better if the roots extend out and downward in a natural position. They should also be well tamped for, if air gets to the roots in large quantities, it is fatal. After this they must be well cultivated and properly fed, since no bush fruit will be satisfactory if neglected.

What is the best way to trim red and black raspberries, and when should it be done?

The best way to trim any of the cane fruits is to remove the old canes that have fruited as soon as possible after picking is finished, also all weak and diseased canes. No further pruning should be done until the following spring, when the canes should be thinned to the desired stand and shortened into strong, vigorous buds.

Is it advisable to head-back red and black raspberries in midsummer?

On the level land the practice of heading-back is all right. However, where snow drifts in winter, laterals are liable to be badly broken if not ruined.

Please give best cultural directions for black raspberries; for red raspberries.

The cultural directions for both would be about the same. Give a fairly liberal dressing of stable manure after cultivation stops and plow the earth up to the vines late in the fall, turning it down lightly as early as possible in the spring. During the season cultivate thoroughly, working both ways, and often enough to conserve moisture and keep down weeds. This, with a fair application of 10 and 8 fertilizer before the spring plowing, should give results.

Is it advisable to wire up a support for garden raspberries?

It is not necessary, but is more convenient for picking and securing clean fruit. Judicious pruning is often a great aid when no trellis is used.

Would it damage the berries to plant potatoes with them the first year?

Except where space is very limited, berries should not be interplanted; few persons will give the care and feed necessary to grow two crops at one time.

How can snow be prevented from breaking down raspberry canes in winter?

The best and only sure way is to stake and tie. They will be less apt to break if not pinched back causing laterals to grow.

How are raspberry and blackberry canes laid down for winter without breaking?

Take out some earth in front of the hills, then force the entire plant over, cover lightly with litter and then with earth.

What fertilizer should be used for raspberries?

For nitrogen use stable manure. Raspberries also need potash and phosphorus in liberal amounts — a 10 and 8 with stable manure. If the bushes do not make the desired amount of growth, hen manure is good to bring them up.

What is the insect which rings new raspberry canes? Can it be controlled?

The insect which rings young raspberry plants near the tips, causing them to wither and die, is the raspberry cane-borer. In June the adult beetles girdle the young canes, usually making two rings about one inch apart, between which the eggs are deposited within the canes. The larvae burrow downward at the center of the cane. The most satisfactory treatment is

to examine the bushes in late June or early July, removing all withered tips several inches below the place of injury.

Will anything prevent the green worm from appearing on raspberries?

The green worm referred to is the larva of the raspberry saw-fly. The insects may be destroyed by spraying the foliage as soon as the trouble appears, usually in early June, with arsenate of lead two pounds to 50 gallons of water, or with powdered hellebore one ounce to one gallon of water.

Is there a remedy for rust on berry bushes?

There is no satisfactory remedy for the orange rust on raspberry plant. This is a fungus disease which is not controlled by spraying. The affected plants should be dug out and burned at the first appearance of the disease.

What is the best way to treat cane blight of black raspberries?

The cane blight of black raspberries can be controlled in part by removing infected plants and burning them upon the first appearance of the disease. Some varieties are more susceptible than others and should be discarded.

What can be done with yellows on black raspberries?

At present the cause or remedy of a trouble affecting black raspberry plants usually described as "yellows" is not known. The plants become stunted, the leaves assume a mottled yellowish-green color, and the fruit fails to mature properly.

What is crown-gall on raspberries?

Crown-gall on raspberries is a disease of a bacterial nature resulting in swollen, warty excrescences at or near the crown of the plant. No satisfactory remedy is known. It is advisable to avoid setting any raspberry plants on which the disease appears.

Would spraying with bordeaux or lime-sulphur raspberry bushes or strawberries set in an old orchard result in injury?

Strawberry plants set between the trees have been injured with lime and sulphur spray. There would be little or no danger with bordeaux mixture on the strawberries, unless it was very strong, and none on raspberries, unless they were leafed out.

STRAWBERRIES

"Of all the small fruits known to man, none other is so deeply and fondly cherished, or hailed with such universal delight, as this lowly but youth-renewing berry."

JOHN BURROUGHS

Please suggest several good varieties of strawberries for different sections of the state.

The same variety of strawberry does not usually succeed in the different sections of the state, nor on the majority of farms in the same section. A few plants of several varieties should be tested before planting extensively for commercial purposes. The following varieties are suggested for trial: Beder Wood, Brandywine, Chesapeake, Columbia, Early Ozark, Glen Mary, Golden Gate, Highland, Marshall, Rough Rider, Sample, Senator Dunlap and Stevens' Late Champion.

Give the name of a variety of early strawberries that will do well on clayey soil.

An early berry that will do well on clay or any other soil can only be determined by trial. Strawberries are very particular as to requirements, and one that would do well in one place might be a failure in another under apparently similar conditions. Choose several varieties and try them; then select the one that most nearly fills the requirements. This is probably the only sure way.

In selecting strawberry plants from a new bed in the spring, is it as well to select those which have put forth no fruit buds; and will runners from these plants also be sterile?

The fact that plants have no fruit buds is not an indication that the plant is sterile, but rather that it grew too late or was made too late in summer to allow the fruit bud to form. If plants are not old enough to form buds in fall, they will bear no fruit the following season. Any plant of sufficient size is good to set even if it has no fruit buds. It is always better to select those nearest the parent plant. Those in the center of the rows are weaker.



*"The strawberry field its sweets shall yield,
While the western winds are breathing."*

STEADMAN

Please explain pollination of strawberries and its necessity?

Some varieties of strawberries have blossoms in which the flowers contain at the center the female organs or pistils, which are surrounded by a circle of male organs called stamens. The stamens bear anthers which contain pollen that must come in contact with the pistils before fertilization can take place. In other varieties the flowers contain at the center only the pistils. These flowers must be pollinated in some way from the flowers containing stamens, in order that fruit be produced. The blossoms containing both stamens and pistils are usually readily fertilized.

Should more than one kind of strawberries be planted in a bed to bear well?

With staminate or perfect-flowered varieties, i. e., blossoms that have both stamens and pistils, there is no advantage in mixing varieties. If, however, a pistillate variety is planted, staminate varieties should always be set with them or the blossoms will be mostly barren, and as best bear only small and ill-formed fruit.

When should strawberry plants be set?

Spring setting is preferable to fall setting. Set in early spring in well-prepared ground.

Do strawberries do better in hills or in matted rows?

As generally grown the yield will be larger in matted rows, and the quality better when grown in hills. However, if labor is taken into consideration, it is best to grow them in matted, or rather in thinned rows. It means a great amount of labor to grow berries ideally in hills, and if the same amount of labor was expended in properly spacing the plants in the row and keeping off the runners, the result would be far better than with hills. There would be as fine fruit and more of it.

For a small home garden is it better to grow strawberries in rows or let them cover the ground?

This must always depend somewhat on the one growing them. For me it would never be satisfactory to let plants cover the ground. They could not be given the proper cultivation for best results, or be properly mulched in summer to keep the fruit clean and conserve the moisture, both of which

are essential in growing a berry of good quality and clean for table use.

How far apart should strawberry plants be set, and when and how planted?

If quality is considered, better berries can always be grown in thin, narrow rows. These need not, of course, be set so far apart as in wide rows. The distance apart in the row must always depend upon the ability of the variety to make plants. Set poor plant-makers 12 inches in row, good plant-makers 24 to 30 inches. Early spring is the best time to set, and they may be planted with trowel, spade or dibble.

Can strawberries be grown to ripen in the fall successfully?

A few varieties have a natural tendency to bear in the fall. Unless a special market is available at high price, they are not considered so profitable as when fruited at the usual time.

Would you advise cutting off all runners on strawberry plants the first year?

If strawberries are grown in hills, all runners should be kept cut. If grown in matted rows, no runners should be cut until you have the stand desired. After that it is of advantage to keep the runners off.

What is the best way to remove runners from strawberry plants?

If the planting is in rows, an edging tool is best; if in hills, a hoop with four blades riveted to it extending down about three inches and having an upright handle which can be set over the hill and given a turn.

Give a good rotation with strawberries as the principal crop.

Plow under berries as soon as picking is over and sow with buckwheat, turnips or millet. Top dress this liberally with manure in the spring, plant with either corn or potatoes, and keep them clean. Remove them early enough to sow again with a cover crop, and turn in early spring. Give liberal application of potash and phosphoric acid. Fit and set to berries.

Is not thorough cultivation the most essential thing in strawberry growing?

No, because if the soil is not suited to strawberries or is not of the proper fertility, the berries will do nothing. Thorough cultivation is very essential rather than most essential.

How often should strawberries be cultivated?

Often enough to conserve the moisture and keep them free from weeds. Frequent cultivation also hastens decomposition in the soil, setting free more rapidly the plant food so essential to plant growth. There is no danger of cultivating too much.

What is the best method of treating a strawberry bed the second bearing season?

As soon as berries are done, mow the bed close to the ground, rake all tops and coarse parts of mulch in windrows and draw off. Put on a sharp, large-tooth cultivator and go as many times through each row as is necessary to work it up thoroughly, widening out the cultivator and leaving a row of plants about six inches wide. Chop out all old and superfluous plants, weeds, etc., with sharp hoes; then side-dress the rows with a fertilizer analyzing 10 per cent. phosphoric acid and 8 per cent. potash and cultivate it in. By this time the bed should be as clean as a new one, and should be given the same treatment for the remainder of the season. How much work this will be depends entirely on how clean the bed was in the fall.

Is it worth while trying to revive an old strawberry bed; would it not be better to set new plants elsewhere?

This always depends upon the condition of the bed. If very foul, or the plants are in poor shape, it is always more satisfactory to set a new bed. On the other hand, if in good shape and properly cleaned out, they are sometimes more profitable the second year than the first.

What is the best thing to do with a year-old strawberry bed?

Let it bear in June, mulch it in fall, and renew it the third year by transplanting runners.

Will a hard freezing in the fall and winter injure the strawberry plants?

Strawberry plants are seldom injured by hard freezing if the ground is free from standing water. It is the alternate freezing and thawing that does the mischief, heaving the plants out of the ground.

Is not winter protection essential with strawberries to get the maximum results, other things being favorable?

To my mind winter protection is very essential; keeping the plants from heaving out during the winter and spring, conserving the moisture in dry weather, and keeping the fruit clean during wet weather, all being necessary for best results.

Do you advocate strawberry mulching? If so, what would you use, manure or straw?

Yes, for the reasons stated in answer above. Strawy horse manure is best, but avoid that containing weed seeds. Next, in the order named, come rye straw, oat straw and buckwheat straw. Where salt hay can be had, because of its freedom from weed seed, nothing is better.

Can land be too rich for strawberries?

Strawberries will stand heavy feeding without injury. As a rule, the land is seldom made too rich. Any fertilization, however, may be carried to extremes.

What element in the soil is chiefly used by strawberries and raspberries, and what fertilizers best supply this?

Analyses indicate that strawberries use more potash than nitrogen or phosphoric acid, and raspberries more phosphoric acid. Yet one of the most desirable kinds of plant food for both strawberries and raspberries is well-rotted stable manure applied annually early in the season. The kind and amount of commercial fertilizer to use depends largely upon the need of the soil and can be determined only by trial.

Will the use of phosphoric acid and potash on strawberries increase the size of the fruit?

Not necessarily; the size depends partly on the variety and on the amount of moisture available, especially at fruiting time, as well as on the supply of available plant food.

Is nitrate of soda valuable on strawberries? Can it be safely applied in the spring and preferably at what time; what time in a dry season? How much per acre?

No soil is suitable for growing strawberries unless well filled with organic matter. On suitable soil for strawberries, nitrate of soda might be very harmful, by promoting too soft a growth of berry; and the only way it is generally advisable to use it

is in light applications when the plants are set or during the early growing season.

Would it pay to phosphate strawberries in spring before fruiting?

If the soil were somewhat deficient in phosphoric acid, it would be advisable to apply acid rock at the rate of 300 pounds per acre very early in the spring before fruiting. Better results would doubtless be secured if the fertilizer were applied at the rate of 500 pounds per acre the previous year.

Are wood ashes good for fertilizing strawberries? If so, when would be the best time to apply them?

If the soil lacks potash, the application of wood ashes often gives excellent results. Apply broadcast over the rows as soon as growth begins in the spring.

Is lime of any use on strawberries?

Strawberries do well in an acid soil. Lime is of no essential value for this crop.

Is there any practical way of combating the white grub which feeds on strawberry roots?

There is no practical method after the grubs attack strawberry plants. As they are usually most numerous in sod ground, it is advisable to avoid land of this character for the strawberry bed.

What causes rust on strawberry leaves, and how can it be prevented or controlled?

The trouble referred to is a fungous disease called leaf blight, its presence being indicated by circular, light-colored spots bordered with red. The disease may be controlled by spraying with bordeaux mixture using the 3-3-50 formula as growth begins in the spring, and again just before blossoming time.

GARDENING

"It is not simply beets and potatoes and corn and string beans that one raises in his well-hoed garden; it is the average of human life."

CHARLES DUDLEY WARNER

What garden truck will do best on dry, sandy soil in a warm location?

Most growing vegetables will do well under these conditions. Avoid planting varieties that will take a long time to mature. All vegetables grown largely for their seed can be grown well in a sandy loam, and many that are grown for their leaves will find such a soil ideal early in the season.

What is a good variety of early head lettuce, and how should it be raised?

Tennis Ball is good, and many others which come later and are somewhat larger are of equally good quality. To raise early lettuce one of two methods may be used: Sow the seed in the fall in the open ground and winter the plants under a litter of straw, transplanting them in the open field 12 inches apart for work entirely by hand, or 22 inches apart for work by a horse; or sow early in a hotbed, transplant to cold frames two or three inches apart to properly harden the plants, and then set as early as the ground can be worked. Either method will give excellent results, providing plenty of fertility is available.



Would it be profitable to use more than 2 per cent. of nitrogen in a commercial fertilizer for late peas?

It would seem unnecessary to use an excess of 2 per cent. of available nitrogen, since peas obtain much nitrogen from the air.

Can cucumbers, squash and melons be started successfully in a hotbed?

A popular way of starting cucumbers, squash and melons is to plant a few seeds on inverted sods, from four to six inches square, taking the sod to the hotbed and cutting it out in blocks. Another way is to sow seeds in strawberry baskets filled with rich, fibrous soil. The transplanting is easily done by cutting down the sides of the basket and sliding out the soil.

What causes Hubbard squash vines to wither and die after making a good growth, and what is a remedy?

The vines have probably been affected with cucumber or squash blight. Bordeaux mixture is recommended.

What information can you give regarding the worm that infests cucumber and squash vines?

This question, undoubtedly, has reference to the squash vine borer. The only known remedy is to cover the joints with a small quantity of earth, inducing the root growth at the joint.

What is the best remedy for cucumber, squash and pumpkin vine bugs?

For the striped cucumber beetle dust the plants with one quart of wood ashes, land plaster, air-slaked lime or road dust, in which has been well stirred a tablespoonful of kerosene oil.

What is the proper way to raise musk melons?

Enrich the land with manure and fertilizer. Sow seed of a good variety, six feet apart, allowing three plants to the hill. Hoe and cultivate frequently. Pinch off the tips when three to four feet long.

When should early tomatoes be planted and in what kind of soil?

Plant as soon as all danger of frost is past. A light soil is best.

How can tomato rot be prevented?

There is no known remedy.

What causes blight in a field of tomatoes, and how may it be prevented?

Tomato blight is closely related to potato blight. Use a weaker solution of bordeaux than is commonly used for potatoes — a 3-4-50 (3 pounds of copper sulphate, 4 pounds of lime, 50 gallons of water). Spray about every 10 days, from the time the plant is well started until the nights become cool. For blossom-end blight no remedy has been found.

Why do turnips grow woody?

Woody turnips are caused by lack of moisture. While in the cellar the moisture has evaporated leaving the woody fiber. All that class of vegetables should be grown quickly and stored where there is least evaporation.

How can the garden be rid of snails that destroy the plants?

Air-slaked lime or land plaster is the most effective remedy for slugs or snails.



INDEX

“ I certainly think that the best book in the world would owe the most to a good index, and the worst book, if it had but a single good thought in it, might be kept alive by it.”

HORACE BINNEY.

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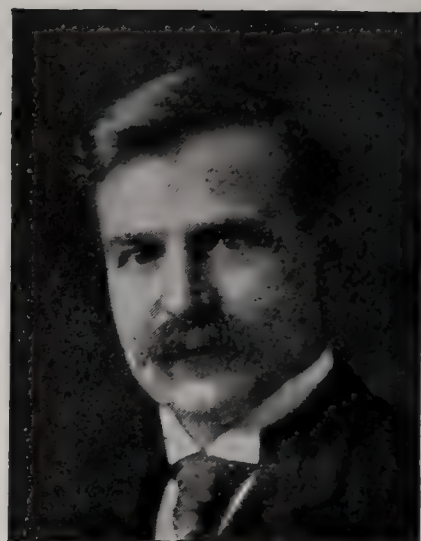
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SPEAKERS AT FARMERS' INSTITUTES WHO ANSWERED QUESTIONS

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The dairy cow Butter making

Harry B. Winters
Dairy barns

Professor J. E. Rice
Poultry

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Gardening

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Sheep

Representative of Conservation Commission
Forestry

Credit for answering questions in Part I. should be given as follows:

B. D. Van Buren
Horticulture

William Hotaling
Small fruits

STATE OF NEW YORK
DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Bulletin 44
(PART II.)

Questions

AT

Farmers' Institutes

COMPILED UNDER THE SUPERVISION OF THE
DIRECTOR OF FARMER'S INSTITUTES

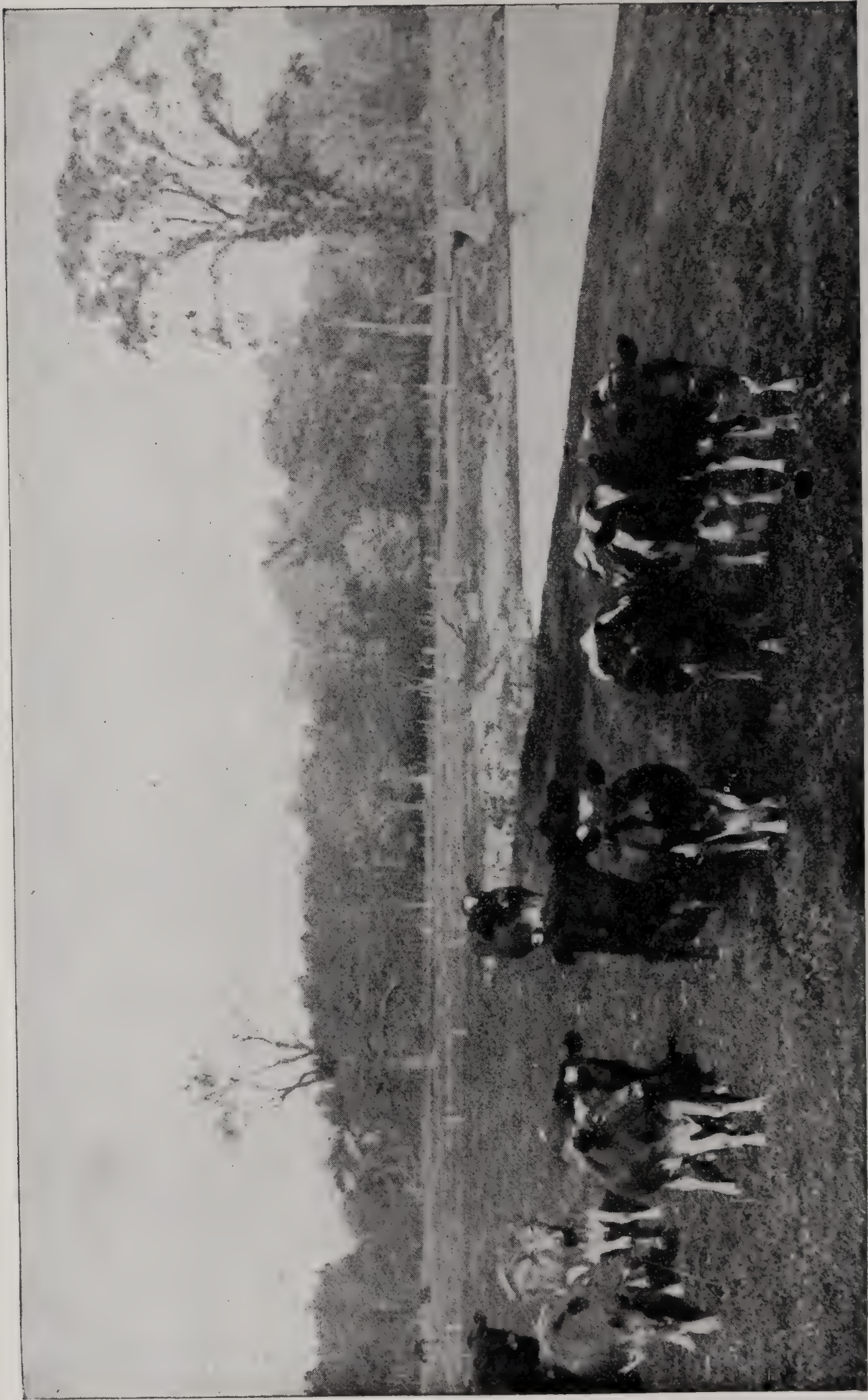
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DAIRYING

“What a wonderful thing is milk! From the lowest mammal to noble man, made in God-like image, milk is the flesh builder, the nerve power, the very essence of life. It is the one product all indispensable, universal. The cow, man’s queenly servant, sacred in history, deserving of the most kindly regard of man for animal — because giver of the most intricate of life’s mysteries, that greatest of life’s necessities — milk. Symbol of purity — milk! Comprising all the elements of life, as does no other food, no other food deserves man’s attention as does milk.”

Selected from *Hoard’s Dairyman*



Herd of Pure-bred and Grade Guernseys

DAIRYING

How many dairy cows can be kept on fifty acres of tillable land worked to its fullest capacity?

With intensive cultivation and soiling, it is possible to keep as many cows as there are acres of tillable land.

What does it cost to raise a cow?

This depends somewhat on the locality

and the value of the land and pasture. At the present prices of grain and forage and under ordinarily good farm conditions, it will cost at least \$75 to raise a cow until she becomes a mother at two years of age.

At what age is a cow most profitable in the dairy?

From four to seven years. Prior to this a portion of her feed must go to build up her frame, and later there is the decline due to age.

How much milk should a cow give to be considered a good one?

That depends somewhat on the quality of the milk and the price obtained for the same. With milk of about 4 per cent. fat, selling at ordinary market prices, it will be necessary for a cow to give at least 6,000 pounds per year in order to make it profitable.

Which is the more profitable, a cow that gives 8,000 pounds of 3-per-cent. milk or one that gives 4,000 pounds of 6-per-cent?

If the milk is sold by the quart or pound without regard to its content, the former is the more profitable. Where the quantity is reduced half and the per cent. of fat doubled, there would be no difference in the value on a fat basis.



Is it advisable to have part of the herd registered cows to start an A No. 1 dairy?

Yes, if the registered cows are from an ancestry of good producers and not simply recorded in some herd book. Such cows should produce more at less cost than cows not well bred. The owner will be likely to take better care of them, and their progeny can be sold for two or three times the price of grades, and the cost of rearing them is no more. Of course, the number that a man should start with will depend wholly on how much he has to invest. The ordinary man must be content with a few. In any event, he needs a pure-bred sire and a few good registered cows, which mated with such a sire will, in a comparatively short time, give him a herd of pure-breds.

Can we raise pure-bred cattle as cheaply as cattle bred haphazard?

Yes; as a rule more cheaply, because the pure-bred cattle have been bred for a purpose and can make better use of their feed than those bred haphazard.

How much could a farmer afford to pay for a pure-bred sire for a grade herd?

He could afford to pay \$500 if he had twenty cows, but one of excellent breeding can often be purchased as a calf for from \$25 to \$50. Assuming that from the twenty cows there would be eight heifer calves, which should be worth fully \$10 more from a pure-bred than from a grade sire, it would mean a gain of \$80 per year. This would be a large interest on the investment, and such a sire may and should be kept until he is eight or ten years old.

To what extent should inbreeding with cows be carried?

Inbreeding should be done with extreme care. This is often confounded with line breeding. The former is mating animals such as brother or sister or a cousin; line breeding is mating mother and son or sire and daughter. The latter can be done with much more safety and is often to be commended to establish characteristics. The law obtaining in this case is that the mating of animals with defects in themselves or ancestors increases the tendency of developing these defects in the offspring. On the other hand, the same law obtains that where desirable qualities are known to exist on both sides, the bringing together of two bloods with desirable qualities will fix them on the off-

spring with a greater certainty, and most of the development in our domestic animals has been brought about in this way. When one attempts inbreeding or line breeding he should have the courage to reject any that show defects.

Explain how community breeding could be of benefit to farmers.

A breeding association run in connection with a cow testing association can be of great benefit to farmers for the following reasons:

1. Better sires can be secured at the same price, as a number can be bought at one time.

2. Sires can be exchanged and after a time purchased from other members of the association.

3. Stock for sale can be advertised and sold at a much better advantage than by a single farmer.

4. A buyer can come into an association and know that if one farmer does not have what he wants he can doubtless secure it from some other member.

5. If the herds are pure-bred animals, the yearly semi-official records can be made in an association at a much less cost than when made in a single dairy.

It is better to have the association consist of one breed if possible. As a result of community breeding at Lake Mills, Wisconsin, with a single breed of cattle, a reputation for good individuals of the breed was established, and in a single year \$175,000 worth of Holstein cattle were shipped from there.

Is it advisable for dairymen to make frequent tests of the milk of individual cows as well as a composite test? If so, why?

A composite test of the dairy tells us nothing about the test of the individual cow. Therefore, if we are going to make a success of dairying we must turn our attention to the production of the individual cow.

Where milk is sold on a butter-fat basis, a cow giving a large mass of low-testing milk is often a damage to the herd; her milk lowers the test of the herd for the month to such an extent that it does not bring as much money as it would had the milk of this cow been fed to a calf. Have a butter-fat test made at least once a month of each individual cow in the herd. Breed from the best producers in milk and fat, always using a sire



Prize-winning Ayrshires

from a cow with a good record in milk and fat. In this way you will breed both milk and fat production into the herd.

At what age should a heifer begin to breed?

It is usually desirable that a heifer should become a mother at from 24 to 26 months of age; younger than this means a dwarfing of the structure of the cow. If she has been properly developed up to that time she should make a profitable record the first year without affecting her constitution. If she is allowed (as is the practice of some farmers) not to become a mother until she is three years old, the tendency is to take on a beefy appearance, and in many cases she may fail to breed altogether. Where the heifer is bred as in the first instance, it is usually better to allow an interval of 14 or 15 months to elapse before she becomes a mother again.

Is it policy to breed a good bull to his heifers?

Yes, if the bull is strong and vigorous, possessing no undesirable qualities and the heifers are the same, the breeding will intensify these desirable qualities. This is particularly applicable where one is breeding grades, for the progeny of such mating will not only be three-fourths of the blood of the sire, but three-fourths of that particular strain. In doing this one should have the courage to destroy any calf which develops undesirable qualities, and in no case should it be attempted where either bull or heifers possess such.

When is the best time to raise a calf—in the spring or in the fall?

A fall calf is to be preferred. It will be large enough to be put in pasture the following spring; and if a heifer freshening at about two years of age, will have the advantage of spring grass several months after she has been milking. This will serve to prolong her first milking period, which means much in the training of a persistent milker.

How can a calf be taught to drink when it will not learn as others?

Some calves never learn to drink as well as they should. If a short piece of inch hose is inserted in the mouth of such a calf, it will often drink more readily than without. Where any such device is used it should be thoroughly scalded or ptomaine poisoning may develop.

Will calves inherit tuberculosis from the cow?

A calf is seldom born with tuberculosis. Only about two per cent. of those born from tuberculous cattle are so affected, but they may inherit weaknesses which make them more susceptible to this disease. There are several herds of cattle scattered about the state, having tuberculosis in an incipient form, which are being kept under the Bang method. These calves are removed immediately after birth and fed on milk from healthy cows, or on that from their mothers after it has been pasteurized, and from these, healthy cattle are developed. The experiment station at Geneva has developed a healthy herd from this kind of cows.

What is the cause of white scours in young calves and what is the remedy?

This trouble in calves is serious and produces much loss. The affected calf should be immediately removed from the others and kept in a clean stall. A teaspoonful of creoline diluted in milk or water is often of advantage and small doses of castor oil are of value. In the case of animals that are not valuable, treatment is hardly worth attempting. The prevention of the disease by strict cleanliness and great care in feeding is more satisfactory than cure.

If a two-weeks-old calf does not eat, having been very hearty until this time, should he be let go until next feeding time or given some remedy at once?

With an animal as with a human being, very often the wiser thing is to omit a meal. If the calf seems right in all other respects this is advisable before dosing with medicines.

Is there any feed equal to new milk for calves? If so, what?

Not for the first four weeks of the calf's life. After that, the fat in the milk is not so essential because its digestive powers are stronger, and it needs more of the building material. Milk from which the fat has been removed, if sweet, is the next best thing. In changing it is wise to gradually reduce the amount of whole and increase the skim milk.

In raising calves how long is it advisable to feed whole milk and in what quantity; when begin to add cooked feed and how long continue before giving feed dry?

This will depend somewhat on the vigor of the calf. Any calf that is worth raising is worth giving more or less whole

milk so long as it seems to require it. Two weeks is the shortest possible time that it should be fed this, and in very many instances this period may be doubled. By gradually increasing the amount of skim milk with the whole the change can be made without loss. When the calf begins to eat a little hay and grain, the whole milk can be done away with.

Is it all right to feed freshly-separated milk to calves and pigs?

Yes, feed while warm and fresh.

Can we raise our calves and pigs economically without using grain?

If the young animals have access to plenty of good pasture, they may be raised economically and satisfactorily without grain. Even then, a small amount of grain in addition will usually pay, depending somewhat on the price of the grain and the value of the calf or pig after it is raised. It is doubtful if a scrub of either type would pay for grain at any time, while one wellbred would use a considerable amount with economy.

Is there any harm in feeding young calves or stock from galvanized iron pails?

No; they are greatly to be preferred to a wooden vessel, which should never be used for this purpose as the wood absorbs germs which no cleansing can destroy. Galvanized pails are easily scalded.

What is the largest amount of skim milk that a four-weeks-old calf should have to keep it in good appetite?

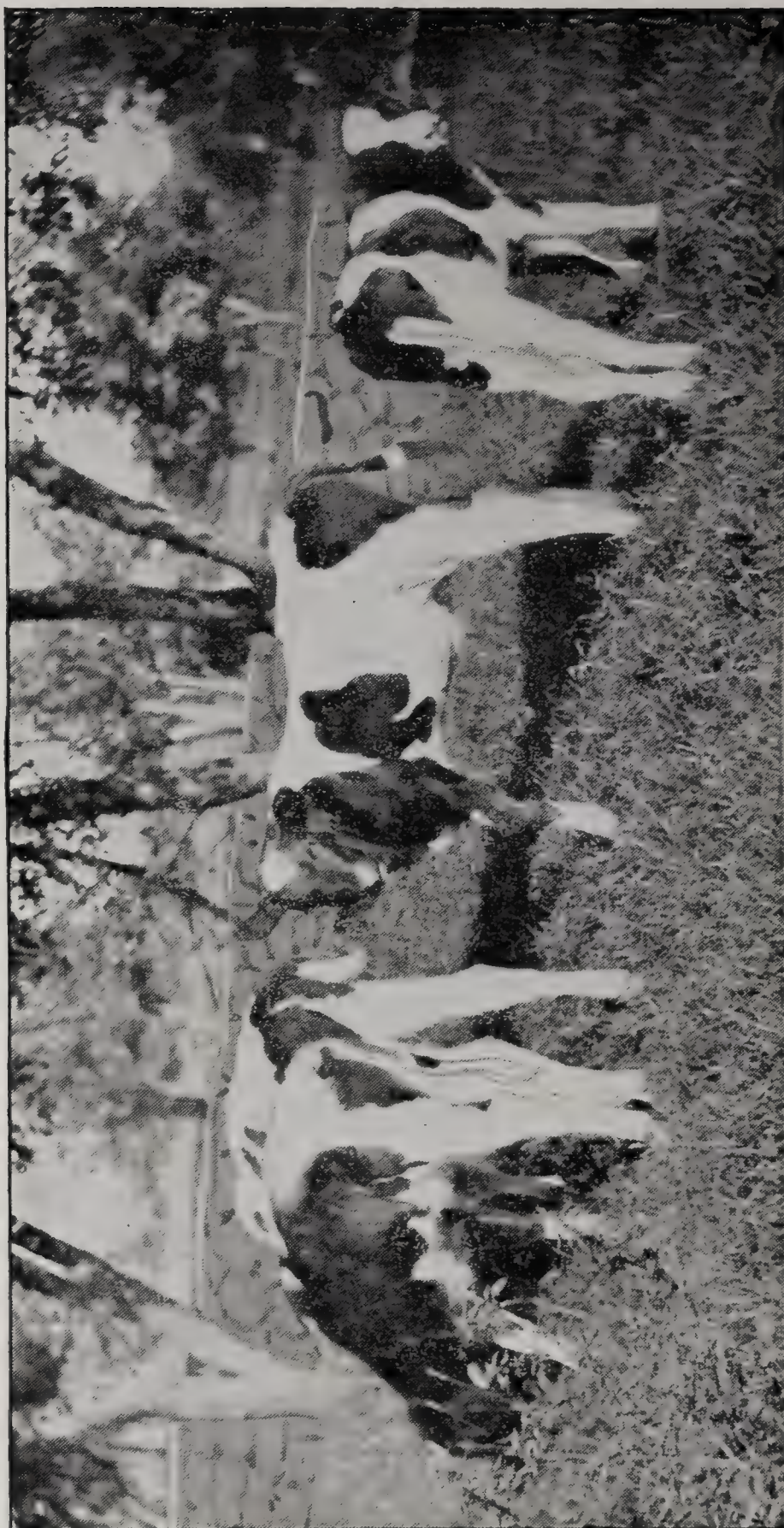
More calves are injured by having too much than too little skim milk. It is not wise to see how much they will drink; be guided by their condition of thrift. Usually four or five quarts twice a day is sufficient.

Give proper ration for a bull calf to be raised for a herd sire.

There is no better food for a young growing animal of any kind than oats. Combine with this enough linseed meal to keep the bowels in a laxative condition, with plenty of skim milk and early-cut clover or fine hay, with some ensilage or roots.

What grain would you advise using with separated milk to feed heifer calves?

It is never advisable to put the grain in the milk. A little in the bottom of the bucket after the calf has finished drinking



Holsteins with Good Ancestry

will soon give it the taste and desire for the grain. It may then be placed in a box where the calf can eat it at will. Oats and cracked corn, equal parts, with a little linseed meal is perhaps the best grain ration for a young calf.

Without skim milk, what should a calf be fed for the first six weeks?

Few calves will pay for raising, for the first six weeks at least, without both whole and skim milk. After that, while they will not do as well, if they have plenty of wheat bran or oats with enough linseed meal to keep their bowels regular, and the addition of a little blood meal and some succulent food like grass or silage with plenty of clover hay, they can be developed very well. Many of the patent calf foods are excellent, but all exceedingly expensive. A calf not good enough to feed milk for the first six weeks is usually not worth raising.

How should whey be fed to raise good calves?

Whey is not the best feed on which to raise young calves. The very fact that the term "whey calves" is indicative of poor quality would verify this statement. Whey contains some sugar and a small amount of fat, but is largely deficient in bone and blood material. To balance this a protein grain should be fed.

Is skim milk worth more than three cents per hundred pounds for feeding purposes?

The value of skim milk is largely relative, depending on the price of other feeds and on the character of the animal. When wheat middlings are worth \$1.50 per hundred, it is worth very much more than when the middlings are worth \$1. For a calf under six months old, or a pig under three, it is worth very much more than for an older animal. At present prices of feed, skim milk for young animals is easily worth 30 to 40 cents per hundred. This has been demonstrated in many practical tests.

What kind of grain is best to feed a growing calf, and should it be whole or ground?

The calf under six months old will do fully as well if it has whole oats rather than those ground. After that, it will probably be better to grind them. Other hard grains should always be ground or cracked.

What kind of meal is best for calves, and how should it be fed?

Calves will always do better if they have their grain dry. Fed with the milk, it is taken into the stomach without the secretion of saliva and is not so thoroughly digested. The word "meal" is of wide interpretation. Young calves need very little corn-meal. Linseed or flaxseed meal in moderate quantities is richest, and with these may be fed a little wheat flour or middlings or oats. The latter are rich in bone and nerve-making material.

Would ground flaxseed be a good feed to add to skim milk for feeding young calves to take the place of the cream? Should it be fed raw or cooked?

This is excellent, and while it may be fed raw it will give better results if cooked and made into a jelly. The latter entails some labor.

What is the best grain ration for wintering calves to insure good condition in the spring?

There are other things that calves need besides grain in their ration to put them in good condition. They should have the very best alfalfa, clover or other early-cut hay and a succulent food. To supply this, there is nothing better than a limited amount of corn silage. In addition, crushed oats, wheat middlings and corn-meal in equal parts, with a small handful of linseed meal added daily, will make an ideal ration. Just how much to feed will depend on the age of the calves; from two to four pounds a day should be sufficient with the forage above. For young calves under a year there is nothing that will make more growth or keep them in better condition than sweet skim milk, if such is available.

Is it advisable to feed blood meal to young calves?

This is one of the very best foods for young calves, containing the elements they need in the most concentrated form; and although somewhat expensive, not nearly so much so as most of the prepared calf feeds, and more satisfactory. A teaspoonful three times a day with their food will be found sufficient.

Is it good policy for farmers to veal their calves?

This depends altogether on the price that can be obtained for the milk and for the veal, and how much labor is available to milk the cows. Where farms are distant from the milk markets

and labor is scarce, this is a very profitable branch of dairy industry. At present prices of milk, the cows will return more from milk production than from veal, if labor is not taken into account.

Is it profitable to veal calves by letting them suck their dams?

There is no way a calf can be so well vealed as this. It then takes the food nature intended for it in the natural way, secreting some saliva with the milk which aids in digestion. The only objection is that it is often an injury to the teats of a cow. The patent calf feeders by which the calf nurses through a rubber nipple are very nearly as good, but unless thoroughly scalded every time they are used they will become foul and ptomaine poisoning will result. It is rather difficult to make a first-class veal by letting the calf drink the milk from a pail.

What should be fed to young calves to fatten them?

It is pretty hard to make a satisfactory fat calf without whole milk. Even though they attain a fair weight their flesh will be dark and the carcass less desirable. The feeding of warm, sweet skim milk in a way that the calves can nurse it in the natural manner, with what they will eat of corn-meal and wheat middlings, combined with a little linseed meal, will make a fair calf, and while these will not bring the highest price they are usually grown at a profit.

What grain ration is best to prepare calves for veal if they are to be sold when about eight weeks old?

Two parts corn-meal to one part flaxseed meal is an excellent ration for this purpose.

What can be obtained a quart for milk fed to veal calves sold at seven cents per pound?

This will depend somewhat on the size of the calf to start with. If one has a large-framed, rapidly-growing Holstein or Shorthorn, he will get very much more for his milk from veals than in the smaller frame and less rapidly growing calves. On an average, one could scarce expect to get more than three cents a quart for milk with veals at the price mentioned. The fact that the calf does the milking should be credited to it, although this may be offset in a measure by possible injury to the cow.

Will feeding good ensilage hurt a three-months-old calf?

No, it will be a decided benefit to it. There are few foods other than skim milk that will give so much growth to a young calf as soon as it will eat it, as ensilage.

Is there any value in rutabagas for calves?

Calves, like all other animals, are the better for some succulent food, and when no other is available rutabagas serve a good purpose. Care should be exercised that they are cut small enough so that the calves do not choke.

What feeds can best be grown to develop young stock?

Alfalfa stands at the head of the list, next to this red clover, then silage. A combination of silage and alfalfa or silage and red clover is better still. For grain nothing is better than oats, oats and peas, or wheat shorts and oil meal.

What grain contains ash in a sufficient quantity for yearlings?

All the brans are rich in ash. If the yearlings have in addition clover hay, the above should afford an abundance. Malt sprouts also contain a large per cent. of ash and is a very good feed for this kind of stock.

Can two-year-old heifers be injured by crowding with grain? Will it affect them in years to come?

If the heifer has been fed liberally and intelligently with grain from her birth, it will help to develop her and make her a better cow for the balance of her natural life. Such can be fed with much more liberality as well as profit than those who have lacked it during this formative period. Any overfeeding of the two-year-old heifer after calving may produce inflammation of the udder which will injure her then and naturally in the future.

How long should a heifer go dry the first year she gives milk?

It is important with a heifer after she has her first calf to endeavor to establish a habit of long milking. To this end it is usually wise to refrain from breeding her for at least six months. Then milk her for at least a year, when she may be dry six or eight weeks.

Is it necessary for a heifer to be poor in order to make a good cow?

No; do not be afraid to feed your heifers; a ration of part oats is recommended.

Is it possible to form a reasonably fair judgment from a heifer at two years of age as to the character of the cow she will make at the age of five or six years?

Generally a heifer that fails to make good the first year never amounts to much. Sell them to the men who do not need to weigh their milk.

What do you consider a profitable yield of milk from a heifer during her first year?

That depends, of course, upon the breed of the heifer and the quality of milk that she will give. A heifer from the Channel Island breeds should give not less than 3,000 pounds of milk testing about 5 per cent. One from the dairy breeds whose milk tests not more than $3\frac{1}{2}$ or 4 per cent. of fat should yield from 4,000 to 5,000 pounds. Many do very much better than that.

Which would be more profitable to the farmer, all things considered,—to sell milk wholesale for $3\frac{1}{2}$ cents per quart or make it into butter to sell for 35 cents per pound?

With milk not exceptionally high in butter fat three and one-third cents per quart is better than making it into butter; but with milk testing 5 per cent. a forty-quart can would make four and nine-tenths pounds of butter which, selling at 35 cents per pound, would make the milk worth a trifle over four cents per quart. To this must be added the cost of making the butter which would perhaps be fully compensated for by the value of the skim milk and buttermilk for feeding on the farm.

Are we not robbing our farms by selling all our milk?

Theoretically, yes. If the skim milk can be fed on the farm and to other animals the fertility can be more readily maintained. On the other hand, it is no more robbing the farm to sell the fertility in milk than in potatoes or grain or any other form of farm products.

How much does it cost per quart to produce milk from ordinary cows?

In the writer's herd for the past two years the price has varied from three and one-fourth to three and one-half cents; this in-

cludes interest on money invested in cattle, labor and feed. The milk produced tested about 5 per cent. That of a lower grade given in larger quantities might be produced for somewhat less, but the cost of feed for such cows would probably be greater. It is safe to say that 3 cents per quart is as low as a man can produce milk with good cows under present conditions. With ordinary cows it will cost more.

What governs the price of milk and cream in New York or Philadelphia?

The price of milk or cream anywhere is really established by the law of supply and demand. This is evidenced by the fact that when milk is exceedingly scarce — as it has been at intervals in the past year or two — the price goes up regardless of any that may have been established. The large dealers and milk associations in both cities do, it is true, establish a price for the milk or cream, but this is governed by the supply which appears to be in sight.

Can the condensers compete with the city markets in prices for milk?

The prices paid for the whole milk by the city markets are better than can be obtained for any manufactured product of the milk, except when the price of the milk is exceedingly low for a short time or the milk very rich, and the price for the manufactured product exceedingly high. The condensers are able to compete the year around only by being able to sell a portion of their product as crude milk.

Why will cows give a steadier flow of milk in winter than in summer?

Usually because conditions are more uniform. In summer the cow is subject to changes of temperature when out in the open, and usually her food supply is not as regular then as in the winter.

Which is the more profitable, winter milk at \$1.50 per hundred, or summer milk at \$1.20 per hundred?

This depends largely upon the situation of the dairyman producing the milk. One with abundant pasture on cheap land would probably do better at summer prices. Another, lacking such pasturage but with abundant silo capacity, would make the greater profit at the winter price. It must be remembered that in any case the cow must be fed through the winter, and unless

she is fed so as to maintain her bodily vigor there will be a loss in production later on. An increase of grain ration will usually, in a good cow, be more than paid for by the milk she gives.

Which is more profitable, winter or summer dairying?

On general principles we cannot afford to have the cows stand dry more than two months. Whether that shall be in the winter or summer depends somewhat on local conditions. It is a well demonstrated fact that a cow giving birth to her calf in late fall or early winter will, other things being equal, give a thousand pounds more milk during the year than one that freshens in the spring. But because of the extremely high price of feed and the fact that there is more of a surplus in winter than in mid-summer, it may be wise to forego the larger production and make more of the milk at a time when it is scarce and can be produced more cheaply.

Can demonstrations on judging the dairy cow be made practical?

Yes, intensely so. There are certain characteristics in all breeds that the best producing cow must have, and taken collectively one can largely determine the merits of the cow. Any demonstration which familiarizes the dairymen with these points is practical; but in the last analysis the test must be the scales and the Babcock test.

What do the letters A. R. O. signify when attached to a cow's name?

A. R. O. means "advanced register official," and is an indication that she has produced a sufficient quantity of milk and butter to entitle her to this recognition.

Is the dual purpose cow profitable?

To expect all the good qualities to be combined in one animal is to expect the impossible. The dual purpose cow probably means one that will give a fair



Kerry

amount of milk, butter and beef, some of each and not the most of any one. This is not the cow for the ordinary man. If his

purpose is to make milk he might better have a strictly milk type; if butter, a butter type, and if he is rarely situated so that he wants to make beef, a beef type. Dual purpose cows generally are the property of dual purpose men.



First Premium Guernsey Heifer

What breed of cattle is best adapted to the hill pastures, particularly the poorer pastures?

The environment in which the stock have been developed is a proper indication of their ability to thrive under like conditions or to deteriorate where such environment is lacking. For instance, the Holstein cow has been developed for over 2,000 years on the lowlands and rich pastures of Holland with very little effort on her part to obtain her food, and when she is obliged to travel over large areas of hill pastures to obtain the same, she does not flourish there as does, for instance, the Ayrshire, developed for more than two centuries in the Highlands of Scotland. One of the advantages of the French-Canadian cattle is that, having been so long inured to rather poor conditions, they thrive under such better than most other breeds.

What is the most profitable cow to keep on the farm?

That depends wholly on what is to be done with the product. If cream or butter is to be produced then the butter type of cow

should be selected, such as the Jersey or Guernsey; if milk, then the Ayrshire or Holstein; if beef, Shorthorns, Herefords or Angus.

Which is the best breed of cattle for milk and butter?

There is no "best" breed, combining all the desirable qualities. A man should keep the breed best suited to his farm and to the product he intends to produce. If milk alone is desired and this to be sold by the hundred pounds, there are no cows that will produce a quart of milk as cheaply for the food consumed (regardless of its quality) as will the Holsteins. But when it comes to the matter of butter fat, the Channel Island cattle stand at the head. At the Pan-American Exposition the Holstein cows produced a quart of milk — considering the feed consumed — at a trifle over a cent per quart; the Channel Island cattle for a little over a cent and a half. A pound of butter was produced by the Holsteins for between twelve and thirteen cents for the food consumed; the Channel Island cattle for between nine and ten cents.

What is a Jersey cow worth, providing she will make 400 pounds of butter in ten months?

From four to five hundred dollars, if one could insure her life as an investment. Although she is precarious property for butter production alone, leaving out her value as a breeder, she would be cheaper at \$150 than a cow consuming as much feed and making not more than half the product, at \$40 or \$50.

Are Jersey cows as long-lived as other breeds?

Most certainly. As a matter of fact the Jerseys are not only long-lived but exceedingly hardy. Some of the large producing cows of that breed have made their records after eight and ten years of age.

Are Holstein and Holstein-Friesian different breeds of cattle?

They are the same breed. They originated in Friesland, the most northerly province of Holland.

Are there any pure-bred red and white Holstein cattle?

Yes; there is occasionally a red and white Holstein calf dropped that without question is a pure-bred. Long ago some of these cattle were of that color. This is an illustration of the

law of atavism, where characteristics of very remote ancestors develop in offspring.

Can beef cattle compete successfully in a dairying section?

No; for two reasons. First, it will require nearly as much food to produce a pound of beef as a pound of butter. The former is worth about seven cents; the latter more than twenty-five. This will much more than pay for the extra labor. Second, while beef can be produced cheaply on lands lying remote from the centers where pasture is abundant, in order to produce beef the year around with pasture there must be corn, and such farms are usually not corn farms. The area where beef can be successfully produced is surely and rapidly decreasing and exists only on the large tracts of land where grazing can be carried on nearly or quite through the twelve months.

What would you advise a poor man to do, go in debt to purchase blooded stock or make the best of his scrubs, if the scrubs are a good lot?

If the cattle referred to are a "good lot," I would not call them "scrubs." The latter will often be found in blooded stock. The real value of blooded stock is that, being bred for generations along one line for some specific purpose, they are able to perpetuate their qualities with a certainty not possible in those lacking such breeding; hence well-bred stock is desirable. For a poor man to go heavily in debt for large numbers of such animals would probably be unwise, but it would certainly pay him to get a start even if he had to go somewhat in debt to do so, because the progeny of such stock will be worth much more than that of ordinarily good stock, and will help him to pay his debt. More than one man has done this to advantage.

Do you regard the pure-bred sire of especial value to an association, the herds of which are composed principally of grade cows?

I consider the pure-bred sire to be very valuable with a herd of grades, for the reason that he overcomes the lack of breeding in the cows. When a grade is used no one can tell whether he will perpetuate the qualities of his grade or his pure-bred ancestors. It would benefit the dairy industry more than it is possible to estimate if it were practicable to do away with the use of male grade of all sorts.

Does kindness pay in the dairy?

Yes; and everywhere else. Where a couple of milkers were loud talkers, I have known the dairy to drop off a quart of milk per cow in 48 hours, when they previously had been milked by quiet men. Had they been quiet but rough, the effect would have been the same.

How many days' work, ten hours a day, does it take to care for a cow for one year, in a dairy of from ten to twenty cows?

One hundred and fifty-eight days of ten hours each should do a large part of the milking and care for a dairy of ten cows. This allows four hours a day the year through. An accurate estimate cannot be made without knowing more about the man, stable, etc.



Polled Angus Bull

What is the best way to handle a cow that kicks?

In most cases kindness will do away with the kicking cow. Occasionally, where a cow has been allowed to form this habit, and really becomes vicious, kindness will not wholly avail. The most satisfactory way to handle such a cow is to place a strong leather halter on her head and fasten the lead so as to draw her

head either to one side or the other, somewhat elevated. This will bring the strain on the spine and make it impossible for her to kick. Often, if the kicking is due only to nervousness or a sore udder, a rope drawn tightly around the body just in front of the udder will serve the purpose for the time being.

Taking everything into consideration, when is the best time to have a dairy of cows freshen, early or late fall?

In an experience extending over more than thirty years I have found that cows that freshened in late October, November or December, made the best record; better than those that freshened in the late summer or early fall. The reason for this is that in the latter case, after the first flush of milk during August and September, the frost affects the pastures and the change must be made from green to dry fodder. Such cows of necessity reduce in their flow and many times cannot wholly be brought back again.

Is it wise to continue milking a four-year-old cow, due to freshen in ten days, or should she be dried up?

If possible, I would dry up the cow not ten but forty days before freshening. Because of the rest, she will give an increase in milk after she freshens to more than compensate for that lost in the drying. On the other hand, if the cow is such a persistent milker that there would be danger of injuring her udder by drying her, it would be better to continue to feed and draw enough milk to relieve the udder. It must be borne in mind that to take all the grain feed away from the cow before she freshens is to deprive her of that which she needs to develop her unborn calf.

How should a cow and her calf be treated at the time of freshening, also immediately before and after?

Put the cow in a box stall and make her comfortable and warm. Give her plenty of warm food, also plenty of warm water just before and after calving. A pound of Epsom salts just prior to and shortly after calving is of benefit, particularly if the cow is constipated. Gradually feed to the full ration, and do not milk her out dry, but draw a little milk frequently. Let the calf remain with the cow until her milk is good. Feed the calf its mother's milk for the first three weeks, being careful to have it at a temperature of about 90 degrees.

Is it a good plan to not milk a cow for two days after calving?

The cow will be less likely to have milk fever if some milk is left in the udder for the first twenty-four hours after calving. Whether it would be best to leave it all there would depend on the individual cow. In some cases it is wise as well as humane to draw a portion of it.

What is the proper feed for a cow before calving, and what quantity should be fed?

A cow before calving needs, first of all, feed which is non-heating and laxative in its nature; next, one containing a sufficient amount of bone, blood and muscle-forming material to build the unborn calf; and one containing sufficient carbohydrates to maintain the energy of the cow. The former can be found in alfalfa, clover, oat and pea hay — all protein foods; silage, affords succulence and energy; and bran, malt sprouts, dried brewers' grains or other bulky food of this nature supply ash and bone. The feeding is very important, as the cow requires as much food to build her calf as to produce a thousand pounds of milk. When it is considered that from three-fourths to two-thirds of this calf is built in the two months previous to birth, it is manifest that to withhold sufficient building material from the cow at this time is to either reduce her vitality or compel her to give birth to a weak calf; perhaps both. Many cases of abortion doubtless result from lack of proper treatment at this period.

How soon after a cow freshens should she be fed a full grain ration?

Usually not until after a week or ten days. This will have to be determined largely by the condition of the cow's udder. Better err on the side of delay than crowd too fast.

What is a good remedy for cattle lice?

There is nothing better than the carbolic dips which are sold under various trade names and can be purchased for about \$1.50 per gallon. Dilute from fifty to one hundred times according to the particular insect. Directions are given on the package.

Give a recipe for a spraying liquid for flies on cattle; one that will last from morning until night and will not injure the hair. Would the same preparation be advisable for horses?

It is scarcely worth while attempting to make a preparation of this kind because various compounds are sold on the market at a comparatively low cost which are as effective as any. Zenoleum is a fair type of these, which are composed largely of carbolic acid and coal tar. They all have a stimulating effect on the skin in addition to their properties which kill the flies, and should be applied at frequent intervals. They may be used on horses, but the tendency is to stick up the hair. Such preparations are also valuable as disinfectants in the stable.

Is it advisable to dehorn cattle and in what way can it best be done?

It is very desirable, as is shown by the fact that to find a herd of horned cattle is the exception rather than the rule. From mature cattle the horns may be clipped with dehorner; in the case of calves up to a couple of weeks old the horns may be destroyed by clipping the hair about them, moistening the crowns and rubbing with caustic potash. Dehorned cattle unquestionably will give more milk, because they are not subjected to injury from the horns of their mates, besides being safer to handle.

Does singing while milking increase the flow of milk?

No; it very materially reduces the flow.

Is it desirable to milk cows more than twice a day, and will this develop a greater milk yield in a cow? Would you advise beginning to milk three times a day as soon as the heifer freshened?

It is excellent dairy practice to milk every fresh cow that is a large milker three or more times a day for the first thirty days. This may be continued as long as she gives milk enough to warrant it, which probably would be about forty pounds or more per day.

What is the average increase in the amount of milk in a cow milked three times a day over twice a day,—take a good Holstein in full milk?

This would vary considerably in different animals; however, in most cases I think the increase is enough to make it profitable. You will not only get an increased amount of milk, but the large yield will continue for a much longer time.

Does it pay to card and brush cows?

Yes, to a reasonable extent. It is important that all the dirt should be removed; and the cow will digest her food better if the pores of her skin are kept open by a brush.

Is it not a pretty sure way of introducing tuberculosis into a healthy herd to build what is called a sanitary barn where the air is tubed in and out, and keep your cattle night and day in such a barn?

Tuberculosis cannot be introduced into a healthy herd except by the specific germ coming from a tuberculous animal. If no such germs are present it would make very little difference what sort of a barn a herd was kept in. If the barn was truly sanitary and properly ventilated there would be less likelihood of the animals being affected by such germs as might enter, than in an ill-ventilated and unsanitary stable. Physicians are advising men and women having tuberculosis to live in pure air; the same laws apply to cattle. No matter how sanitary the barn, the cattle would be better out doors during a portion of the day when the sun is shining and the weather not exceedingly cold. It is a fact that many of the so-called sanitary barns are not really sanitary.

The cow being a self-repairing machine to manufacture raw material, could anything more be expected than what the material used would make?

Most emphatically, no. The food that the cow eats, first of all, must build up and maintain her own body; next, that of her unborn calf, and third, furnish her milk, which nature intended for the support of such calf. When one realizes that the body of the cow and her offspring are composed of bone, blood and muscle, covered with a moderate amount of skin and hair, and that all but the bone (which comes from the ash in the food), is produced by the protein, it is apparent that the cow from her birth, even when dry, must have a goodly amount of both of these materials. The solids of the milk being at least one-fourth protein show that a large part of this is absolutely necessary if the cow would produce a maximum amount. There is also energy-supplying material needed, known as the carbohydrates and fat. The wise, economical feeder will therefore aim to supply these necessary materials to build up and maintain the machine, as well as to provide for maximum product.

Should a cow be fed a stated amount, and if so how many pounds per day; or should she have all she wants to eat?

A cow should have all the coarse forage that she will eat, with enough grain added to fully maintain her bodily vigor; if she is milking, about one pound for each three pounds of milk.

Will feeding ensilage before milking taint the milk?

Yes; it is always wiser to feed it after milking.

Does a cow chew her food more than once?

As the cow takes her coarse food into her mouth, she chews it enough so that it will readily pass into her first stomach, after which it is brought to the mouth again and thoroughly remasticated. So it may be said that she chews her food twice, although really the last mastication is the real chewing.

What is a cow's cud?

The food in the stomach which has been only sufficiently masticated to allow it to enter, is brought back again to the mouth to be rechewed. If a cow does not chew her cud it is because she is sick and not inclined to eat.

Can the farmer afford to feed stock foods at \$200 a ton?

He can make the same foods himself for \$60 per ton or less.

What is protein?

It is that portion of the food from which is made the blood, lean meat, skin and hair. It will also produce fat and energy, but usually not as economically as the carbonaceous feed.

What is the feeding value of nitrogen-free extract found by analysis?

Nitrogen-free extract, as given in the feed analysis tables, means carbohydrates in the food apart from the fat. Their value is to produce heat and energy in the animal, and the food is two and one-fourth times as strong.

What is the best way to supply ash for cows?

Clover and alfalfa both are rich in ash, as are the brans and by-products of the breweries. Malt sprouts contain over 6 per cent.; cottonseed meal has about 7 per cent. For mature cattle, fed an abundance of home-grown fodders including plenty of clover hay, there is usually sufficient ash with the

ordinary grain ration. It is very important that young, growing cattle should have a large amount of it in their food; therefore it is wise in purchasing, to buy feed that contains an abundance of ash. In some cases where the latter is lacking, it has been found profitable to feed a tablespoonful a day of fine-ground, purified bone meal.

What is a balanced ration?

Theoretically, a balanced ration is one containing one part of protein to five and one-half or six parts carbohydrates. Practically, it is a food containing sufficient nutriment to supply all the needs of animals and their products.

What feed or grain alone is the nearest to a balanced ration?

Pasture grass; next to this, alfalfa. There is no single grain that will make a balanced ration.

If mixed pasture grass is a balanced ration for cows, why is not mixed hay?

The pasture grass is succulent and nearly all digestible, containing very little fiber. When this grass grows and is cured as hay, it contains a very large proportion of indigestible fiber. As an illustration of this: If one will take the fresh clippings from the lawn, which is not dissimilar to pasture grass, and feed to one cow in the stable, she will eat from 90 to 100 pounds daily and drink only a moderate amount of water and do very well on that alone. If this grass is allowed to dry, what formerly weighed as above will weigh not to exceed 18 or 25 pounds. Give that amount to the cow with all the water she will drink, and it will soon be manifest in her decreased milk flow that she is not getting the same out of the food. Mature hay is much less digestible than the dried grass.

What is the best balanced grain ration for a milch cow when feeding good mixed hay and ensilage? How many times a day would it be advisable to feed the grain ration; how often the ensilage?

In considering a grain ration for cows the food nutrients of the grain must first be taken into consideration, next the price per hundred pounds. It is usually better to mix grains, using one bulky, the other a part bulky and part heavy grain. If one has ensilage containing sufficient corn it does not pay to add corn-meal to the ration. Dried grains and cottonseed

meal in proportion by weight of two of the former to one of the latter make a very good ration with mixed hay and silage. Theoretically, an excellent plan is to put the grain on the silage, feeding both twice a day, with the feed of hay at noon. If it is more convenient to feed the grain alone, following it by silage, there is practically little difference. The important thing is to feed regularly.

What is your opinion of the soiling system of keeping dairy cows?

At least a partial soiling is always to be recommended. In a few cases, where land is exceedingly high, a total system of soiling is profitable. There are very few farms where the pastures will supply a sufficient amount of forage the season through to maintain the flesh of the cows and their milk production. Dr. Hills, director of the Vermont Experiment Station, found that where cows were entirely stable fed their average shrinkage was seven pounds a month; where partially stable fed, 13 pounds, and where they were dependent wholly on pasture, the shrinkage was over 37 pounds.

Does it pay to soil cows when tillable land is worth \$30 to \$40 per acre and milk \$1.15 per hundred pounds?

Yes; if it pays to keep the cows at all it pays to give them enough supplementary feed in addition to pasture to enable them to maintain their normal milk flow. In the majority of cases the \$30 or \$40 per acre land will not produce sufficient pasture to do this, and if the cows are allowed to shrink on their flow from insufficient feed, the labor of caring for them is practically the same; and the increased amount of milk that they will give by a little soiling will more than pay for the extra labor.

How are we to get a green crop so as to be able to feed green feed every day?

The only sure way of having a green crop to feed every day is to have a summer silo. Actual experiment has shown that silage is cheaper at 25 cents more a ton than any of the green foods, as a milk producer. For those fed direct from the field, to provide a succession, sow rye and wheat in August. The former will come up early in May and continue from ten days to two weeks, when the wheat will follow. After this there

will be clover fit to feed, then alfalfa, then oats and peas, sowed as early as the condition of the ground will permit. This to be followed by early-planted sweet corn, then millet, then corn will be in order for the balance of the season. The millet and early corn may be planted on the same ground that grew the rye and wheat.

How can we most profitably provide suitable food to keep up the flow of milk in late summer and autumn?

Early-planted sweet corn and Hungarian grass, with more corn and pumpkins until the silo is ready, are the best.

Which is better for milch cows, sowed corn or green oats and Canada peas?

The latter will give the best results. Corn should be thinly planted so that it matures, rather than thickly sown, to give good results as forage.

Which is the more profitable, to raise oats and peas for cows, or sow the oats for threshing?

This will depend very largely on how much coarse fodder one has. If short of forage, the oats and peas will supply this need, and also reduce the amount of grain necessary to be fed. The expense in harvesting and putting before the stock is very much less. If the grain is the chief item and the straw is needed, as on most farms, for bedding, then it will pay better to thresh at least a portion of the crop, growing the oats without the peas.

When is the best time to cut oats to feed for milk?

When the head is just beginning to form; then the most nutriment will be in the straw. Later on light oats will form, which shell out and are not readily eaten.

What is the value of pea and oat hay, sowed half and half and cut during the milk stage?

If cut when the peas are in blossom, and the oat head has just begun to form, they are a more valuable milk-producing food than clover.

Are cornstalks good for a new milch cow, and what quantity of corn and oats mixed with oil meal does she need?

Cornstalks are good but some other roughage, such as clover or mixed hay with roots, should also be fed. In the absence of

other roughage, perhaps as good a ration as could be arranged with the grains mentioned would be four pounds of oats, two of corn and one of oil meal. The addition of one pound of cottonseed meal or gluten or distillers' grains would be an improvement. The oats might be increased, but not the corn-meal.

What advantage is gained by feeding corn on stalks, over husking and then feeding the nubbins?

It is wasteful and uncertain to feed cows their corn on the stalks, unless they are fed in the silo where the amount is uniform and all can be digested and assimilated. The latter is the profitable and economical way to feed the grain. It will cost at least one-tenth the value of the crop to husk it and at least another tenth to grind it. This will make one-fifth the value of the grain in preparing it for the cows — not one whit better than when it comes from the silo. The husked corn should contain something better than nubbins, which amount to very little under any conditions.

Which will produce the more milk, sweet corn or field corn, when cut green in the field?

The sweet corn, because it contains a larger amount of sugar. This is not true when this corn is placed in the silo. Unless the corn is very ripe before being placed in silo, the increased amount of sugar will turn to acetic acid and the ensilage will be too sour for good results.

Which would be more profitable for a small farm with one or two cows, a cornstalk cutter or a shredder?

The shredder will leave the stalks in a little better condition, but will take more power to operate than a plain cutter, and cost slightly more. Whether the advantages are enough to compensate for the increased expense and labor is a matter that each one must determine for himself.

Is there a difference to dairymen in the value of late-cut and early-cut hay?

There is a decided advantage in early-cut. If the hay is cut when not more than half the plants are in blossom, it will produce as much milk as the same hay standing until it is mature and one pound of grain a day per animal added.

Why is the hay cured but a short time in the sun of better nutriment and quality?

When the hay is cured in the sun the moisture is thoroughly dried out and such curing increases the amount of fiber. When it is cured away from the sun by sweating, this change does not occur to the same extent.

In the absence of ensilage, should cows be fed hay two or three times a day for best results?

It really makes very little difference with or without ensilage whether cows are fed two or three times a day, so long as they are fed regularly and at the same time each day. The period from six o'clock at night to six o'clock in the morning is no shorter than the same time from morning till night; and no man gets up at midnight to feed his cows. It is largely a matter of personal convenience.

Is timothy hay and water sufficient for a cow to freshen in about four weeks? If not, what ration is required?

Most emphatically, no. The timothy hay is very deficient in body-building material. If no other forage is available she should have an abundance of wheat bran or malt sprouts, with enough oil meal to make her voidings of about the same consistency that they would be on midsummer pasture.

Is there any danger of feeding a cow too much hay if she has a reasonable amount of grain? What would be a reasonable amount of hay?

There is no danger in feeding a cow all the coarse fodder she will eat so long as it is sweet and clean. The amount for each animal is best determined by the animal's desires and appetite. What she will eat up clean and have a good appetite for the next feeding is the proper amount. If excessive amounts of forage are given before the grain, the cow may not be able to consume as much of the latter as her needs would require. Therefore, it is best to feed the grain first or in combination with the coarse food.

Would it be better for the farmer to sell timothy hay for \$25 per ton than feed it to his stock?

There is very little stock that will consume hay at \$25 a ton and return the owner anything like this price, even with other feeds correspondingly high. If it were possible, a man might better sell his stock than attempt to keep it on this costly feed.

What is the relative feeding value of timothy hay and bright oat straw?

Timothy hay contains 4.3 per cent. protein, 46.4 per cent. carbohydrates and 1.5 per cent. fat; oat straw, 1.6 per cent. protein, 41.4 per cent. carbohydrates and .7 per cent. fat. These



are the percentages digestible. At ordinary prices of both, the energy required to digest the oat straw will about equal the food value in it; but at present (May, 1912) prices of hay of all kinds the straw will help to fill the paunch and when fed in connection with molasses, which can

be bought for from 12 to 14 cents a gallon, is a cheap and desirable feed.

Is there any profit in making milk from common cows without ensilage?

It is a serious question whether there is any money in making milk from common cows under any conditions. Unless they are capable of producing more than enough to pay for their feed, the labor expended on them, and the interest on the money invested in them, they certainly are "unprofitable servants" with or without ensilage. The ensilage, however, will materially reduce the cost of milk. Except under very favorable conditions, it is questionable whether milk can be made with sufficient profit from any cows without ensilage.

Which is the more economical feed, ensilage or clover hay, if the hay can be bought for \$7 or \$8 a ton?

The two make a good combination. In an experiment where I was purchasing both, I found that three tons of ensilage costing \$7.50 would take the place of one ton of clover hay costing \$10. With the ensilage the milk product was increased above that with the clover hay.

How much good ensilage does it require to equal in feeding value one ton of good timothy hay?

About three tons.

How does ensilage compare with cornstalks for milch cows?

Ensilage contains about 80 per cent. water, a little less than 1 per cent. digestible protein, between 11 and 12 per cent. carbohydrates, and .7 to .8 per cent. fat. Corn stover which has not been unduly exposed to the weather contains about 40 per cent. moisture, 2 per cent. protein, 33½ per cent. carbohydrates and 6 per cent. fat. The silage has from 11 to 12 per cent. of fiber; the stover about 30 per cent. It will be noticed that when the water content has been reduced one-half by drying, the dry matter by the same process has multiplied three times. Fifty per cent. of the value of the stalk is below the ear. This is all consumed and at its best in the silo. When dried it becomes fibrous and unpalatable and is practically all rejected by the stock.

Which is the better feed for cows, ensilage or shredded cornstalks with ground feed, and which will produce the most milk?

Good silage is certainly a far better feed than shredded cornstalks because it contains more nutritive material and, in addition, is much more palatable, being succulent.

What can we grow with ensilage corn for filling the silo to make a more evenly balanced ration?

Theoretically it would seem wise to grow with the corn, cow peas or soy beans, rich in protein. This is being done with



excellent success near Hamilton, Madison County, and I have also seen it done in the South. In the majority of instances, however, it has not been found very practical. The corn being

so cheap and so good, seems to be the best thing for the silo; and the protein supplied in alfalfa, clover, or oat and pea is best made into hay. With the silage, stock crave some dry food.

Can a cow be overfed, to her injury, with clean ensilage?

If the ensilage is from immature corn it may not contain sufficient food nutrients to maintain the cow's vigor, and so she will be injured by eating too much of it; or it may be so rich in corn that overfeeding would produce too much fat and heat, and again she would be injured. I should not hesitate to feed well-matured, moderately-eared ensilage to the amount of 35 or 50 pounds a day to a cow before freshening.

Where a farmer has but one cow what can be fed that will take the place of ensilage?

Cut hay or corn fodder, moistened with water and allowed to stand a few hours.

Is it profitable to feed bean fodder to milch cows?

Bean fodder is very good for milch cows; very much better than mixed hay, and ranks between the mixed hays and the clovers. It is rather constipating and should be fed with a laxative. Being a by-product, its utilization as feed gives the bean crop an added value.

How does vetch compare with alfalfa or red clover as a forage plant?

It has a value as a forage plant, but not higher than red clover and inferior to alfalfa. It is particularly valuable as a nitrogen-gathering cover crop.

Is it dangerous for stock to eat the binding twine that corn or oats are tied with?

Cases have been cited where cows have been injured by eating the binding twine from straw or silage, but I think the danger is not serious. For a dozen years I have fed silage corn and more or less of oat straw tied with twine, and have never had a case where the cattle were injured, nor have I made any effort to remove the twine.

Which is the better for both cows and pasture, to fasten the cows to a thirty-foot stake rope, changed every two days, or permit them to run at large?

The cow will do better when she has her liberty, but she will require more feed than when staked out. If stakes are

changed frequently, after she becomes accustomed to it she will do very well. Most of the cows in Jersey and Guernsey are fed that way.

Will rape make good fall pasture for cows or will it impart a flavor to the milk?

So far as the pasture is concerned, the rape is all right and readily eaten by the cows, but it is very much worse than turnips in imparting a disagreeable flavor to milk. For that reason its use for this purpose is not advised for cows producing milk; better feed it to the sheep, swine or young cattle.

Which is the more valuable feed for cattle, buckwheat or oat straw?

Neither have very much value; buckwheat scarcely any.

Is there any feeding value in buckwheat hulls?

Very little. They contain very little nutriment and are indigestible; better use them as an absorbent in the gutters.

Is barley straw fit to feed either to horses or cows?

Barley straw is superior to oat, but should be fed with care to horses as there may be some beards on it.

When seed oats and barley were evenly mixed, in feeding the straw would the beards injure the stock?

Not cattle or sheep; it might injure horses. As a matter of fact, very little of the barley beards are left on the straw. Most of them go out with the grain and chaff.

Should cows be allowed to eat straw from horse manure piles?

Theoretically this is not a desirable food, yet I have never known bad results to follow the practice. Evidently the cows crave the potash salts that are in the straw from the horse manure. Were they to be deprived of other food and gorge themselves with this, undoubtedly the effect would be seen in the milk.

Is there any feeding value in oat hulls? Would it be advantageous to buy a feed containing oat hulls?

Oat hulls have about the same food value as the straw. Therefore, it would scarcely pay to buy them in concentrated feeds paying \$1.25 or more a hundred for them.

What food value has millet? When should it be sown and what kind is best?

Millet makes excellent hay, standing about midway between timothy and clover. It should be cut as soon as the heads form,

before the seed appears. After that stage it soon becomes hard and woody. Hungarian grass is usually to be preferred as it gives a stronger growth. The seed may be sown any time from June 1 to 30.

How much Hungarian grass will equal one ton of clover hay, in producing milk?

Of digestible nutrients, Hungarian grass will contain 2 per cent. less protein, $12\frac{1}{2}$ per cent. more of carbohydrates, and over one-half of one per cent. less of fat, than clover hay.

What is your opinion of Japanese millet? How does it compare with corn fodder as to feed value; and which is better, to feed green or cured?

Japanese millet has value as a forage and, if cut before the seed has formed, is a very good substitute for corn fodder. But it is not comparable to the corn plant because of the less feed obtained per acre and because of the value of the grain one gets with the matured corn plant. It makes very good soiling for stock fed green, or it may be cured for hay.

Which is the better way to feed grain to milch cows, wet or dry?

With the exception of malt sprouts (which are so dry that if unmoistened they are likely to produce indigestion) and dried beet pulp (which is somewhat of the same nature, and because of its peculiar makeup takes the place of succulent feed), all grain food is better fed dry. Digestion begins at the mouth, and is there promoted by a secretion of saliva, which does not occur when the feeds are wet. This has been thoroughly demonstrated in the most careful tests. The only possible exception would be where the cows do not have access to a sufficient water supply.

When is best time to feed cows grain, before or after milking?

After milking, unless they have been accustomed to their feed before, in which case they might not give their milk.

Is twelve pounds of grain a day sufficient for a cow? Will a ration of equal parts of bran, corn-meal and buckwheat produce a good flow of milk?

Unless she is giving a large amount of milk, twelve pounds of grain is more than most cows will consume with profit. Leaving out the individual cow and taking dairies as a rule, about eight pounds of grain has been found to be enough to keep them in

good condition and the most economical amount that can be fed. There is often a decided difference between feeding cows for profit and feeding them for production. A ration of equal parts bran, corn-meal and buckwheat should produce a good flow of milk.

Will cooking feed diminish its value?

No. Cooking feed will enhance its value, but under ordinary conditions not enough to pay for the fuel and labor required.

Can we afford to buy feed at present prices (May, 1912) with butter at 30 cents per pound?

If we can afford to keep cows at all we can afford to feed them no matter what the cost of the feed. This emphasizes the importance of having the cow capable, when well fed, of producing a goodly amount of product. Certainly one could not afford to feed a poor cow present high-priced feeds at the price mentioned for butter.

Which is the more profitable, to feed cows grain to produce a large quantity of milk, or not feed any grain and take what the cow will give?

If the cow is fed no grain at all and milked, the drain on her system will reduce her flesh to such an extent that it will not pay to milk her. This was thoroughly demonstrated at the Vermont Experiment Station.

What is the best grain ration to feed a milch cow?

One containing one pound of protein to about five and one-half of carbohydrates.

How much and what proportion and kinds of grain would you feed a fresh cow when the feeder has an abundance of green oats, clover hay and ensilage for roughage?

A good general ration is one pound of grain for each three pounds of milk. The oats and clover hay would supply a portion of the necessary protein, and experience shows that where ensilage forms a large part of the roughage, two pounds of grain a day per cow may be saved. Considering the food value, two parts by weight of dried grains to one of cottonseed meal would make an excellent ration with the foods mentioned.

What is the cheapest protein feed on the market at the present time?

Cottonseed meal containing over 7 per cent. ash, 37 per cent. digestible protein, 18 per cent. carbohydrates, and between 8 and

9 per cent. fat. This is a very concentrated food and must be fed in connection with one that is bulky, such as bran or dried grains or malt sprouts. If the cattle are given succulent food, such as silage, double the quantity can be fed with safety than when they are fed on dried fodder. It is constipating and too concentrated for young, growing animals.

Which is the cheaper way to buy protein, cottonseed at \$1.75 or gluten at \$1.45 per hundred pounds?

The cottonseed meal. At the prices given the protein in cottonseed meal will cost five cents, in gluten about seven cents. The cottonseed meal also contains much more ash and fat.

What is the best grain to feed dairy cows when on pasture?

Cottonseed meal is excellent for this purpose, and the manure made because of its feeding will have an additional value for the pasture. It is rather concentrated alone and should be combined with something a little more bulky. Just what this should be will depend very largely on what can be most easily and economically obtained by the feeder.

What would be considered a balanced ration with corncob meal, corn fodder and hay, for cows giving milk?

With these should be fed some protein feed; cottonseed meal and linseed meal, equal parts, with dried grains or malt sprouts or wheat bran. The only objection to the latter is the excessive cost considering its food content.

At the present price of milk and butter, would it pay to buy sixty dollars' worth of mill feed per cow?

This depends entirely on how much milk the cow gives in return for the feed. Sixty dollars is a large investment. Possibly the amount could be reduced if the feed were bought early in the season and at wholesale rather than retail.

We are feeding our dairy cows pea-vine silage from a canning factory twice a day and alfalfa hay once a day. What should the grain ration be? We have corn-meal, bran, distillers' dried grains, middlings and oil meal.

The corn-meal, bran, distillers' grains (equal parts) with half of oil meal would be an excellent ration, omitting the middlings, which are expensive and with these feeds unnecessary. Feed one pound of the mixture for each three pounds of milk.

Why do cows chew bones and sticks, and what should be fed to prevent it?

This indicates a lack of bone material in the foods. Feeding those containing large amounts of ash will generally counteract the trouble; also the addition of a small amount of bone meal to the ration will often obviate it. Where excessive amounts of silage are fed, with a lack of dry feed, the cows seem to long for some dry fodder and often will chew such things as mentioned in their desire for it.

What is a good ration to feed cows for butter making?

In a general way, the same as for milk, with the exception that feeds will have an effect on the texture of the butter. For instance, cottonseed and corn-meal will make a very hard butter; oil meal, gluten and wheat bran, one that is softer. Foods such as buckwheat middlings, which have no appreciable effect on the flavor of milk, will often cause the butter to have an undesirable flavor. Corn, oats and bran, with clover hay and silage, will make butter of finer texture and flavor than any other foods.

Is the following a good daily ration for a dairy cow: Ensilage morning and night; clover hay at noon, and grain feed consisting of three quarts of gluten, three of bran and three of wheat and oats, ground and mixed?

This is a good ration, but might be cheapened by using a pound or two of cottonseed meal instead of part of the gluten or wheat and oats.

What is the best balanced grain ration with timothy hay, for the average dairy cow?

Sell the timothy hay and buy alfalfa or clover. Add a variety of grain making a ration of 1 to 5.5 and feed what the cow can use to advantage.

Give a grain ration to feed with pea-vine ensilage and clover hay.

One part cottonseel meal, two parts gluten, two parts corn-meal and two parts bran. Feed what the animal will use.

We are feeding clover hay, corn fodder with plenty of ears and bear fodder to a heifer just fresh. The milk flow is increasing, but she is poor in flesh. What would you advise feeding to remedy this condition?

Equal parts of wheat bran, corn-meal, gluten meal, cottonseed meal and ground oats.

State how much of each kind of grain should be used to give the best results for milk, using middlings, corn-meal and cottonseed.

Get some bran or crushed oats. Two pounds of bran or oats, 2 of middlings, 2 of corn-meal and 1 of cottonseed meal.

Is bran and gluten with sowed corn a balanced ration for a milch cow?

In order to determine what makes a balance one must know what is in the other side of the scale, so in making a ration for stock with grain one must know the coarse fodder which it is to balance. With ensilage containing large amounts of corn, this would not be a good ration; while it might be with dry fodder. With clover hay one might profitably add more corn than if he were feeding timothy.

The analysis of a certain feed as printed on the bag containing it is as follows: Not less than 3 per cent. of fat, not less than 17 per cent. of protein, not over 11 per cent. of fiber. How can the amount of dry matter and carbohydrates be computed?

This analysis is incomplete in that it does not give the amount of carbohydrates; but fat, protein and fiber are given and those are the essentials. As a general rule grain feeds contain about 10 per cent. of moisture, and where the fiber content is as low as in the one given, it is not of importance to determine the dry matter.

Explain the difference between gluten meal and gluten feed.

Gluten feed contains 18.6 per cent. digestible protein, the gluten meal about 28 per cent.; the feed 61 per cent. of carbohydrates, the meal 48 per cent.; the feed about 3 per cent. of fat, the meal slightly more. There is very little of the feed on the market to-day. The meal is the fine particles of the by-product of starch or glucose factories; the feed is the entire product, containing the hull of the corn.

Is gluten feed alone good for milk production?

Gluten feed alone is never safe to feed. It is too concentrated and lacks ash and fat. No other single feed will produce as much milk, but fed alone it will do so at the expense of the cow's system.

Why is gluten feed worth more than corn itself? And of what value is the starch that is taken from the corn?

One ton of gluten feed contains the protein of about two and a half tons of corn-meal; hence is entirely different in its char-

acter. One ton of corn contains about .8 per cent. of protein; one of gluten about 23 per cent. The starch in the corn is valuable as a fattener and energy producer. Taken from the corn by the manufacturers, it has an increased value in the manufactured product as starch or glucose.

Will gluten increase the amount of butter fat as well as increase the flow?

Nothing will permanently increase the percentage of fat in milk; anything which increases milk flow will increase the amount, not percentage of fat.

Would a mixture of 200 pounds gluten, 100 pounds bran, 100 pounds middlings, 100 pounds corn-meal and 50 pounds oil meal make a good balanced ration with hay and corn stover as roughage?

The above would make an excellent combination, but the bran and middlings are rather expensive. Some dried brewers' grains or malt sprouts might be substituted in their place.

Which of the following rations is more profitable for milk production — gluten at \$26, wheat bran at \$25, with hay and ensilage; or, corn-meal at \$20, brewers' distillery feed at \$30, with hay and ensilage?

Neither of these is altogether a desirable ration; the former is to be preferred. If the same money value of distillery feeds were substituted for the bran in the first ration it would make a very good one; if half of the gluten were taken away and its place supplied with the same money value of cottonseed meal it would be a most excellent one. Corn-meal is usually superfluous with ensilage that contains a sufficient amount of corn. The cottonseed meal would be very much cheaper and make a better combination.

Does it pay to feed oats to cows?

Oats are an excellent feed for dairy cows or young stock. They contain nerve-creating force which does not appear in their analysis. At the Pan-American Exposition the dairies where oats formed a considerable portion of the ration were the ones that maintained the milk flow longest. Usually the price is so high as to make their use prohibitive.

What per cent. of nutrition is lost by feeding whole oats to dairy cows?

This will be determined, as with any other unground grain, by the amount passed in the voidings. From this they receive little or no nutriment.

Is buckwheat a good feed for cows; if so, what quantity should be fed?

The entire buckwheat contains a large amount of starch, and where one has corn-meal or silage usually it is not economical to feed. The starch is largely in the flour, which is worth usually not less than three cents a pound. Therefore, it is better to have the buckwheat floured and invest the money therefrom either in the middlings, which contain 22 per cent. of protein, or if starchy feeds are needed, in corn-meal. The buckwheat middlings are one of the best milk producing feeds in the list, but in butter production should be fed in moderate amounts or they will impart a nutty flavor and a poor texture to the butter, and are likely to produce an irritation of the skin in the human family similar to that produced by buckwheat cakes.

What is the value of corn ground with the cob for feeding?

The value of the corn and cob meal compared with corn-meal is as follows: Ash the same; protein, a little less; the corn and cob meal from 6 to 10 per cent. less digestible carbohydrates and 2 per cent. less of fat. The cob, if finely ground, may have some value in lightening the ration. It is largely a matter of cost of preparation. If the corn and cob can be ground more cheaply than it can be shelled and the grain ground alone; and the miller is an honest man and does not take his toll out of the grain instead of the whole product, it usually is economy to grind corn and cob together, feeding enough more to equal the difference between the two.

With corn-meal at \$1.20 per hundred pounds and barley sprouts at \$1.30, which would be more profitable to feed for milk?

The two are entirely different in their nature, the corn-meal being carbonaceous and the barley sprouts a protein food. They make a good combination. The sprouts have the advantage of being bulky and will take the place of a portion of roughage. They should always be soaked at least twelve hours before feeding.

Which will produce the most butter, 100 pounds of corn-meal or 100 pounds of wheat bran?

The two in combination will be better.

Does silo corn do the cow as much good as that fed to her from the cob?

Yes; more than that fed from the cob, because, being softer, it is much more easily digested. Frequent tests have shown that it is equally as good as when ground into meal, and costs very much less.

Which is the more profitable to feed with meal and corn ensilage, bran at \$25, middlings at \$30, or prepared foods at \$30 a ton?

It is unnecessary to feed corn-meal with corn ensilage that contains a fair amount of the grain. The bran is decidedly cheaper than the middlings at the price mentioned, as the analysis of the two are practically the same. The prepared food is a lottery. It is better to buy the straight by-products and do your own preparing.

Is rye profitable to feed to cattle at \$1.25 a hundred when you can buy corn-meal at \$1 a hundred?

Whole rye is not a particularly good feed for milch cows. Corn-meal is much to be preferred, particularly at the prices mentioned. I should prefer the corn-meal, even at \$5 per ton more than the rye. Better to have the flour taken from the rye and feed the bran, which makes a good combination with the meal.

Would it be safe to feed milch cows cottonseed meal when no succulent food is fed, provided an equal amount of linseed oil meal is fed therewith?

Yes; this would be both safe and wise as well as economical.

Does cottonseed meal fed in moderation interfere with cows breeding?

It has been thoroughly demonstrated that an excess of protein in the feed of dairy cows will tend to interfere with their breeding. Cottonseed meal being exceedingly rich in this element, may have this effect if fed to excess. Nevertheless, it is the cheapest food on the market, and when fed in moderation will have no ill effect.

Is one quart of cottonseed meal and a bushel of ensilage fed morning and night with hay for noon feed a safe ration for a fresh cow? What would be the result if the above ration were fed for a period of five months?

In no case should cottonseed meal be fed to a fresh cow until at least a week after calving. Only a large cow would eat a bushel basket of ensilage night and morning with hay at noon, and one quart of cottonseed meal with this alone would not be

a sufficient ration. If the cow were fed this alone for five months the result would be poor flesh and failure to produce at the pail what she would had she been given more of the cottonseed meal accompanied by some other bulk protein food, such as brewers' grains, malt sprouts or bran.

Does the XXXX brewers' grain contain 33 per cent. of digestible protein?

No; scarcely as much as this — about 26 per cent.

Is oil meal worth more than the analysis would indicate because of its helping to digest the other grain in the ration?

Yes; it has the effect of keeping the bowels lax, which is always desirable, particularly where cattle are fed a heavy grain ration.

Would it pay a farmer to buy oil meal to feed cows, if he has oats, wheat, corn and buckwheat chop for feed?

So far as its food value is concerned, it would not pay to buy oil meal to feed in connection with the feeds mentioned; but it has value as a laxative, since all the above feeds are rather constipating. Although oil meal is high in price, yet reckoned by its food value, it is one of the cheapest feeds on the market, a pound of digestible protein in it costing only a trifle over seven cents. Where there is no silage or other succulent feed, by all means feed a portion of it with these feeds.

At \$2 per hundred pounds, would you advise feeding oil meal for a part ration with corn, ensilage and timothy hay, to milch cows?

Where silage is abundant, affording succulence and creating a sufficient laxity of the bowels, it would hardly seem necessary to purchase oil meal at the price mentioned even with timothy. Better invest in cottonseed.

What is the feeding value of field peas?

Peas contain 2.6 per cent. ash, 18 per cent. protein, 56 per cent. carbohydrates and 9 per cent. fat. These are all digestible.

Is it profitable to feed molasses to farm stock?

Yes; molasses has a decided value as a food. It is practically all digestible, very palatable and laxative. It will not supply protein or bone, and should never be fed to take the place of bran or that character of feeds. At present prices it is considerably cheaper than corn-meal and to be recommended where dry fodder only is available.

Would you advise feeding molasses feed?

On general principles the mixed feeds are not as economical or as pure as the straight by-products. Very often molasses makes palatable and disguises a quantity of worthless fiber. It is better to buy the pure feeds and add molasses if necessary. The molasses in itself is a valuable feed, being laxative, palatable and almost entirely digestible. It contains no building matter and will never supply the protein in feed; but as a source of energy (carbohydrates), at a cost of from 12 to 14 cents per gallon based on the dry matter it contains, it is nearly \$4 per ton cheaper than corn-meal at \$30.

Which is better to fat a beef, oats and corn or bran and corn?

There is comparatively little difference in the food-producing power of the two combinations, so their use will depend largely on the first cost. The bran will keep the bowels in better condition, as the oats have a tendency to produce constipation.

Which is of most benefit in fattening cattle, grain (corn, oats and barley) ground medium, or very fine?

The most benefit will be derived from the medium ground grains.

Will it pay for the extra trouble to scald meal for fattening cows?

Not unless the labor is plentiful and the means of scalding very convenient.

Are potatoes good for milch cows?

The raw starch in potatoes is exceedingly indigestible, and fed to milch cows in large quantities has a tendency to derange their bowels and sometimes injuriously affect the milk. Where there is no other succulent feed a small amount of potatoes — not to exceed a peck a day per animal — may be fed with benefit and safety. Better results will be obtained from feeding potatoes with protein feeds than with those rich in starch, such as corn-meal.

Which is the most profitable to feed milch cows, one acre of good corn, one of good cabbage or one of good beets?

There is no crop which, taken all in all, will give as much and as good food per acre as corn at so small a cost. Beets are excellent but lower in food value than corn and very much

more expensive to raise. There is no question about the feeding value of cabbage being higher than beets, but it must be fed with a good deal of judgment or the milk from the cows, or their flesh if made into beef, will have a decided cabbage flavor. At the usual price for cabbage it is too expensive to feed, but if heads are too small or too soft for market or the price is low, it is certainly a valuable feed for cows.

Are mangel beets a profitable crop to raise for dairy cows?

Yes; they are an excellent succulent food, particularly desirable when there is no ensilage, and where the two have been fed there has usually been a gain because of the beets. Whether they are always profitable is an open question as their growth involves a great deal of expensive labor.

What is the protein content of mangel beets?

About 1 per cent. They are good only as a succulent feed, and will not supply what protein you need for milk cows.



A Field of Carrots Yielding 250 Bushels per Acre

Which will produce the most milk and cream, yellow or red mangel beets, or carrots?

Carrots are the best; and there is no difference in the yellow or red beets.

What is the value of sugar beets compared with mangels for cattle? What is the average yield of each per acre?

They contain like amounts of protein, but the sugar beet nearly 5 per cent. more of digestible carbohydrates; the sugar beet one-tenth of one per cent. of fat, the mangels two-tenths of one per cent. Their yield per acre is about the same.

Is there a good substitute for mangels as a dairy feed?

Yes; silage can be raised more cheaply than the mangels and has a higher nutritive value.

What do you know about dried beet pulp as a dairy ration?

Dried beet pulp contains only about 6 per cent. of digestible protein and it will not pay to buy it as a substitute for bran or other protein feeds. But where no silage is to be had, when wet it serves as a source of succulence.

How much more is an acre of beets worth than one of turnips? Is it profitable to sow them broadcast on clean ground?

Mangel or sugar beets are better than turnips, but must be sown in rows and cultivated.

With no silo, would it pay to raise turnips for milch cows?

Yes, turnips are good, but the mangel beets are still better.

What is the best kind of turnips for cows?

Mangels and sugar beets are better for cattle than turnips, but the latter can be grown more cheaply. The Swedish turnip is better than the ordinary strap leaf; but frequently the latter can be grown in the corn at slight cost. They should not be fed in large quantities just before milking.

Does it pay to raise white turnips in cornfields for stock? How should they be put in for profit?

Yes. While the turnip is low in food value, because of its succulence it makes an excellent food, particularly where silage is lacking. Sown in the corn, the cost is little more than the seed and pulling, and if not gathered they are exceedingly valuable as a cover crop. Usually they may be sown at the last cultivation and should be put in ahead, rather than after the cultivator, unless the soil has an abundance of moisture.

What is the feeding value of carrots with ensilage for milch cows? What grain will they take the place of?

Carrots are not as valuable with ensilage as with dry fodder. They afford succulence, and where abundant will take the place of some corn-meal. They contain only one per cent. of digestible protein and three-tenths of one per cent. of fat.

Are carrots pulled in the spring good for cows coming fresh?

Yes, they are excellent if free from rot and retain no frost.

What are pumpkins worth a ton for feeding cows?

The value of pumpkins is largely relative; probably \$2 a ton, all things considered. They provide succulence at a time



when the pastures are declining, but fed in large quantities are likely to make the bowels too loose. I consider them a most valuable food for the dairy during the latter part of the fall and early winter before the silo is opened. Where mod-

erate quantities are fed it is not necessary to remove the seeds. For sheep and swine they have a decidedly good effect, the seeds acting as a destroyer of intestinal worms.

How much salt a day should a cow have that is giving a large flow of milk?

The average cow should have at least one ounce of salt daily. Cows, like human beings, vary in their requirements and some cows will take more, occasionally less than this. The most practical way is to have the salt where they can have access to it at all times and take such amount as their systems require.

Should salt be fed to a cow in the grain ration?

The addition of a little salt gives palatability to the grain ration, but it is unwise to supply all the salt in this way.

Does salt put in the mow with hay stop the action of heating?

Yes, the salt will tend to stop the heating; and if the hay is overripe or hurt in the curing it will add something to its palatability, but not to its food value.

Is rock salt better for stock than that which is pulverized?

No better; only more convenient, as a lump of it can be placed in the manger where the cow can lick off what she requires.

Can a cow drink too much cold water?

Yes, most surely. If a cow is suffering from thirst and has access to all she needs, she may take in at one time enough cold water to lower materially the temperature of her body, which will require additional feed to restore; or in some cases even enough to produce a chill. This is one of the advantages of having water in the barn where cows can have access to it at all times. Of course, if they can get to the water a couple of times a day there is little danger of their drinking too much.

Where a farmer waters his cattle in the morning and at night and also grains them morning and night, is it better to water before giving grain or after?

It makes very little difference so long as the practice is the same every day. Usually the cattle will drink better after than before eating, and for this reason watering at that time is to be preferred.

Does it pay to put water before cows in buckets so they can have it at any time?

Yes, if the cost of installing buckets is not too great. They permit the cows to take water at will and do away with the necessity of turning them out to drink when the weather is cold or stormy.

Will cows having water before them at all times give more milk than those watered once a day?

When cows become accustomed to drinking water once a day and can get it readily, not too cold, they will do very well and not differ materially in their product than when they have it oftener. But as it is almost impossible at all times of the year to have the water convenient and not too cold, it is wiser that they have it before them all the while or be watered at more frequent intervals.

Is it fair and just for the farmer who has only 3 per cent. milk to receive the same price as the one having 4 per cent. milk?

No. The value of milk is in its solids — fat, casein and sugar — and as 4-per-cent. milk contains more of these solids than 3-per-cent., it certainly is worth more. There would be just as much justice in selling oats weighing 28 pounds to the bushel for the same price as those that weighed 35 pounds.

Would you advise a farmer who keeps four or five cows and is heavily in debt to buy a Babcock tester?

Yes, it might be a means of paying the debt by helping him to find out his poor cows which should be discarded.

What does a milk tester cost and where can they be purchased?

An ordinary milk tester costs about one dollar per bottle; the medium somewhat less. They can be purchased at any dairy supply company.

Will the Babcock test give correct results under all conditions?

Yes, if the sample is correctly taken, the milk properly measured and the test carefully made. These are the necessary conditions.

Does it take an expert to test milk correctly for butter fat?

It does not require an expert in the sense of being a scientist. Anyone who understands the process, has a steady hand and a quick eye and is willing to be careful, can test milk with the Babcock with accuracy.

What are some of the essentials for securing an accurate result in testing milk with the Babcock machine?

If the following precautions are taken, an accurate test should result:

1. Before taking sample, thoroughly mix milk by pouring from one pail to another.
2. Do not let sample sour or freeze.
3. Stir milk before putting in test tube, and mix in acid of the proper strength.
4. Make test by the proper operation of the machine at the specified temperature.
5. Carefully read test before milk cools.
6. Run duplicate sample of each cow's milk and retest all doubtful cases.

What is the official test of a dairy of cows?

It is a test made at stated intervals, under the direction of an accredited man from an experiment station, to determine the amount and quality of the milk given by such cows, so that where the amounts are above the average, they may be officially recorded by the different breeding associations in which the tested animals are registered.

What is the ordinary proportion of fat to solids not fat in milk?

A little less than 4 to 9.

Does the percentage of butter fat vary with the age of the cow?

The variation is very slight.

Does the percentage of butter fat vary from the time of freshening until the cow goes dry?

Very greatly; also with the first and last of each milking.

Which is the heavier, rich or poor milk?

Literally, the poor milk is the heavier. Cream is an important constituent in rich milk, and being lighter than the other portions, rises to the surface; hence it will be readily seen that milk with the largest amount of cream would be slightly lighter than that with less, but the difference is so slight the scales only can detect it.

How much 4-per-cent. milk will it take to make one gallon of 18-per-cent. cream?

About fifteen and a half to sixteen quarts.

Can cows vary in test four to six points from September to October on the same feed?

If the cows were in normal condition a variation as great as indicated would be unusual. The normal decrease during this period should be not more than one-fourth or one-half of one per cent.

Why is it that a cow that is fat at the time of freshening will give milk that is abnormally high in butter fat? Will not this condition continue until the cow is reduced to her normal condition of flesh?

A cow in this condition has a surplus of fat stored up in her body which, as stated, for the time being will make her milk somewhat richer. After calving, a cow will reduce one hundred pounds in flesh under normal conditions before she holds her

own. This is why she will not continue to give the increased fat, because her normal condition of flesh is reduced abnormally at this time.

Can any change be made in the percentage of butter fat by changing the feed?

A change of feed will make no material difference in the percentage of butter fat. It may increase or decrease the quantity of milk, and naturally the amount of fat will correspondingly increase or decrease. Sometimes, for a day or two, there will be a change, but it is only temporary, as has been thoroughly demonstrated by the most exhaustive tests. If it were possible to do this the Holstein breeders would have long ago so fed their cattle that they would give milk rich in butter fat equal to the best Jerseys.

Does the amount of butter fat in milk affect the amount of cheese made from it?

Yes. Fat is an important factor in the manufacture of cheese, adding materially to its quality. Further, a milk with $3\frac{1}{2}$ per cent. of fat will contain about 9 per cent. of other solids, one with 5 per cent. fat about 11 per cent. solids; hence, pound for pound, the latter would make the greater amount of cheese. This was thoroughly worked out by the Geneva Experiment Station some years ago and results given in Bulletin No. 308 which may be had for the asking.

Would it be advisable to use a separator when but one cow is kept?

If you can afford the expense. There is no way that the cream can be gotten as perfectly as with a separator. The next best is the system of submerging the milk in cold water.

Would it pay a farmer who keeps three or four cows to buy a cream separator?

Yes, because with the separator every particle of cream can be taken from the milk and, all things considered, with less labor than in any other way. The skim milk is then in the very best condition to feed, and as small-sized separators, suitable for three or four cows, can now be purchased for \$20 or \$25, the expense is not prohibitive.

Can a cream separator be run by direct belt from a gasoline engine?

It would be much more difficult to arrange the pulleys for direct drive than to use a counter shaft to obtain the desired speed.



Does it pay a farmer to have a separator and separate the milk; then take the cream to a creamery?

Yes. He can deliver the cream more cheaply than he can the whole milk. Aside from this, he has his own skim milk to feed sweet and in good condition if his cows are not diseased. Mixed skim milk from a creamery is bound to contain tuberculous bacilli that will affect all animals drinking it.

Does a cream separator remove all the impurities from the cream?

It takes out the insoluble dirt and a proportionate part of the bacteria, but does not remove the products produced by the bacteria that have been working in the milk.

Will milk cooled in tightly covered cans, unstirred, keep as well as that in uncovered cans, stirred?

With plenty of ice and not too large sized cans it will keep better tightly covered; but without ice it will keep better stirred and exposed to the air.

Is there a practical milking machine?

Yes; there are two or three milking machines that are giving very good satisfaction. The great difficulty with them is the cost of installation, the necessity of having someone with a knowledge of machinery to care for them, and the importance of thorough sterilization of the parts with which the milk comes in contact lest it becomes contaminated. Where these conditions are found the machines are giving satisfaction. In one case a father and son with a dairy of 60 cows are handling

them alone very satisfactorily, where otherwise they would have been obliged to give up the dairy because of their inability to get milkers. Where good milkers are obtainable the machines have no advantage.

What is sanitary milk?

Sanitary milk is milk produced in clean surroundings, free from germs produced by filth, and cooled immediately after milking. Because of these conditions sanitary milk will keep at least 48 hours with ordinary precautions.

What is certified milk?

Certified milk is that made under conditions similar to sanitary milk but from healthy cows, tuberculin tested; containing not over 10,000 bacteria to the cubic centimeter and testing not less than 4 per cent. of butter fat. These conditions must be certified to by the board of health or medical associations in the city in which the milk is sold.

Describe the odor, taste and other physical properties of fresh milk of good quality.

Milk is a mixture of water and certain solids, white in color and sweetish in taste. Its composition is about as follows: Water 87 per cent., fat 4 per cent., casein $3\frac{1}{2}$ per cent., sugar 3 per cent., albumen 1.8 per cent. and ash .7 per cent. It is slightly heavier than water, the specific gravity being 1.029 to 1.032.

Define bacteria. What is an excess of bacteria according to the New York City Board of Health?

Bacteria are minute forms of life not discernible by the naked eye; it would take millions of them to make an inch. They multiply by dividing, thus one makes two, two makes four and so on at a very rapid rate. This multiplication takes place when the temperature of the milk is above 60 degrees Fahrenheit. There are various kinds of bacteria — some desirable and some otherwise. The undesirable sorts come from filth or germs of disease.

From the above it should be apparent that if the bacteria are very small in number at the outset and the milk is improperly cooled, it may be literally seeded with them by the time it

reaches the consumer. Under the New York City Board of Health regulations, market milk should contain not more than 100,000 bacteria per cubic centimeter; certified milk not more than 10,000 per cubic centimeter.

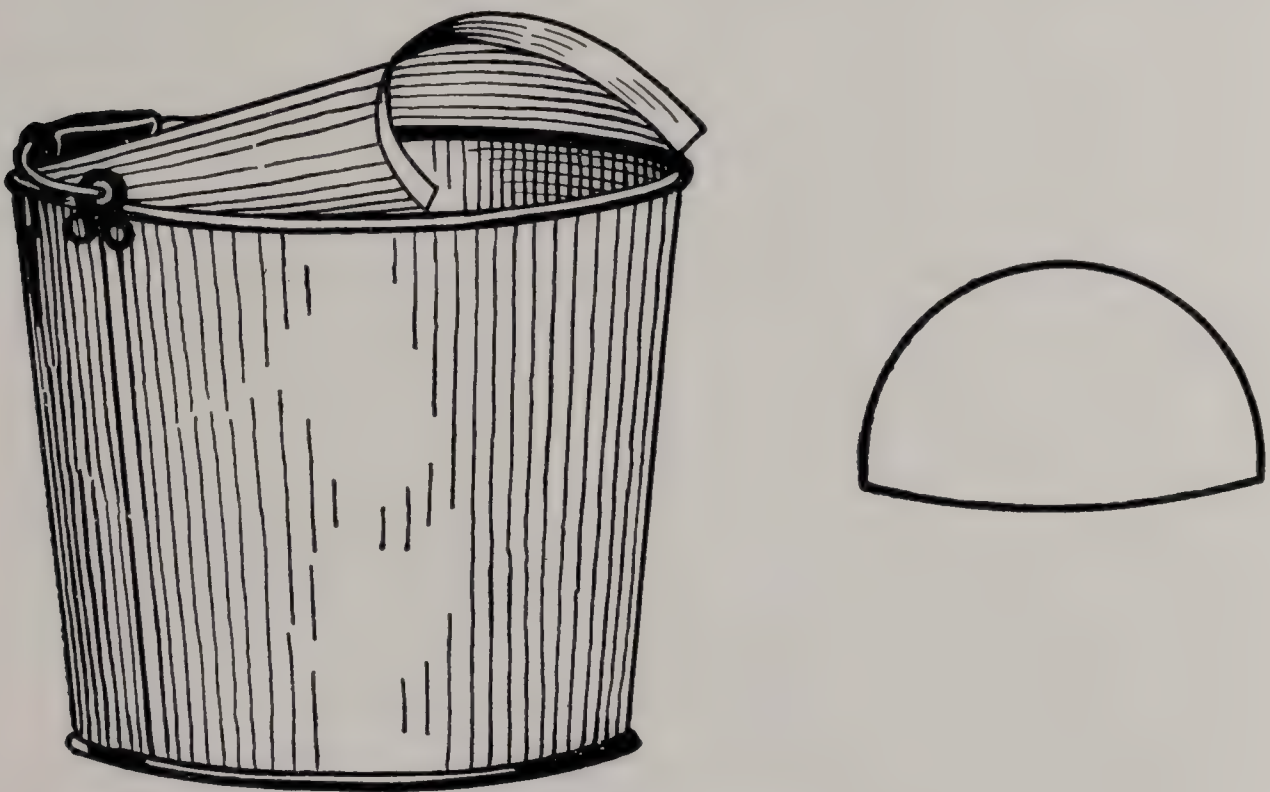
Of course, there are other bacteria besides those found in milk, notably those in the soil that are exciting a great deal of interest, particularly on the roots of leguminous plants.

What will purify the air of bacteria so as to prevent, as far as possible, their entering the milk?

Care that there should be no dust in the stable from hay or other feed or bedding, and an abundance of pure air coming in from the outside. Bacteria also enter the milk from the bodies of the animals, hands and clothing of the attendants and improperly cleansed utensils, as well as from the air.

Can bacteria be strained out of milk? If not, should not all dairymen use partly covered pails?

Neither bacteria or anything else except coarse particles of filth can be strained out of milk. It is a most practical thing for all dairymen to use partly covered pails, which prevent much



Sanitary Milk Pail

filth containing bacteria from getting into the milk. The less the cows are cleaned, the more effective will such pails be, although this is not to be taken as an excuse for dirty cattle.

What is the best sanitary milk pail?

A pail that has given general satisfaction because of its simplicity, as well as economy, is the one recommended by the Geneva Experiment Station, not patented. This is an ordinary twelve-quart milk pail with a cover extending over the top leaving a crescent shaped opening — seven by five inches. Into this one can readily milk and the pail can be easily cleaned. Any tinsmith can put this cover on an ordinary pail, the expense of which should not exceed fifty cents.

Would milking with a cheese-cloth over the pail tend to purify the milk?

No. This might make the milk less pure. If dirt from the cow's body was continually falling on the cheese-cloth and the milk was obliged to filter through it, the last state would be worse than the first.

Should a man be as clean when he sits down to milk a cow as when he sits down to eat his breakfast?

Yes, because he comes in contact with food that he or someone else will have for breakfast, it is apparent that the milk should be clean.

How do tuberculosis bacilli get into milk?

If the bacilli are in the udder or glands communicating directly with it the milk may be contaminated from this source. Or it may come from the sputum of the animal or from her voidings. The latter two would imply slack and filthy methods, which unfortunately exist in many cases.

What effect would milk from a tuberculous cow have on a child?

If the cow had tuberculosis so that the bacilli were in her milk, and this milk was taken by a child, there certainly would be danger of the child contracting tuberculosis, just as it would contract any other disease when the specific germ was taken into its system. Dr. Park, of the New York City Board of Health, made the statement that the post-mortems of infants under one year of age dying of tuberculosis showed that 25 per cent. had the bacilli of the bovine type. In the light of this, no Christian man would knowingly give such milk to his own child or the child of another.

Is the system of score cards as adopted by the New York City Board of Health fair to the farmer?

The perfect score card, like the perfect man, has not yet appeared. The card that lays most emphasis on essentials, such as good air and freedom from dirt, and less on non-essentials, such as a little standing water in the yard or proximity of the cleanings, is the most sane and sensible.

Has the city a right to inspect the country milk, or is it the state's place to see that it is fit for use?

It would seem a self-evident proposition that, in any case, the receiver or buyer had a right to determine the character of the commodities which he purchases. This being true, the city officials who are the representatives of the people living there, should have a moral right to determine the character of the milk that they receive. It is the privilege of the producer to refuse to sell to such city if he sees fit. No faulty inspection or unreasonable requirement should be allowed to obscure the above vital principles in the milk producer's mind. The state also does much inspection, which may or may not be more acceptable to the farmer than that of the city; but inspection has come to stay, and the sooner inspector and inspected come to fair business terms the better it will be for all concerned.

Is it not possible to have milk clean and sanitary without following the requirements of the board of health?

As a rule the requirements of the departments of health as to clean milk are sound and sensible; hence practicable. Sometimes the inspectors sent out by such departments lack knowledge as well as common sense, and require things that are unnecessary. The good judgment of any cleanly man as to what he would consider clean enough for his own table should be a fair guide as to what should be required for clean, sanitary milk. In the majority of cases he will not go astray if he follows the direction of the health department.

What should be the attitude of every dairyman relative to the question of furnishing pure milk, and why?

The price of all products is ultimately determined by the law of supply and demand. The bulk of the milk furnished the market is unsanitary, not necessarily because of adulteration. The dairyman who produces this kind is competing in a market

usually over-supplied. He who furnishes milk which is clean and high in fat content is supplying a not over-crowded market, and hence can do more in determining the price which he receives. For the latter class of milk there is an increasing demand; for the former, a decreasing demand.

Does pasteurizing milk exterminate germ life; and is it more healthful than pure milk from the cow?

Yes, pasteurizing milk (heating it to 180 degrees Fahrenheit) destroys injurious germ life; and where this germ life is disease-producing bacteria, the pasteurized is healthier than the untreated milk, if it contains such germs. Pasteurized milk is not as digestible, and is by no means to be compared with the milk that is really pure when drawn from the cow. Too often pasteurization is only a substitute for destroying the bacteria which cleanly practices would prevent.

Is there a difference in the milk first and last drawn from the udder? If so, what is the cause?

The first milk drawn from the udder will contain very little fat and other solids, and the last very much more than the average of the whole quantity. For instance, I have tested milk where the first quart or two drawn tested 2 per cent., the average of the whole amount a trifle over 4 per cent., and the strippings over 6 per cent. It is difficult to determine why this is, but the presumption is that the milk last drawn has only shortly before been eliminated from the blood, and all the constituents in it are retained by the milk; that first-drawn has been eliminated longer, and a portion of the better parts has been reabsorbed into the body.

How much per quart should be received for bottled milk from tested cows, produced under good sanitary conditions?

Not less than eight cents, and then the cost of delivery should be small.

In winter what causes the milk from a new milch cow to become bitter after standing a day or two?

There is a germ originating in filth from the surroundings or feed which often produces this, and thorough scalding of all utensils and receptacles with which the milk comes in contact should remedy it. Dust from moldy feed or bedding may also cause it.

What makes milk stringy when it is sweet?

This is one of the worst conditions that can obtain in milk, and is brought about by bacteria which originate in filth.

Should soap be used in washing dairy utensils?

No. There is apt to be an odor left, and it is not as satisfactory a cleanser as some of the washing powders. Sal soda should be avoided, as it takes the tin from the utensils.

How many cubic feet of air are required to a cow to produce sanitary milk?

If the air is changed often by a good system of ventilation, 400 cubic feet will do, but 600 cubic feet is a safer amount of air space.

What is the particular objection to stabling horses in the building with the dairy?

The odor coming from the body of the horse, as well as the voidings, is exceedingly penetrating, and for this reason it is objectionable to have them in the same building with the dairy. The manure of horses is one of the most favorable breeding places for the common house fly, and unless it is removed daily, there will be a multiplication of flies in the proximity of any building where horses are stabled.

BUTTER MAKING

How many pounds of butter can be made from one hundred pounds of ordinary milk?

It depends on the per cent. of fat in the milk, which varies with different cows from less than 3 per cent. to over 6 per cent. Each pound of fat in the milk — good, economical methods being used — will make one pound and two ounces of finished butter.

When it is impossible to keep milk set in shallow pans at the right temperature, is it best to add sour milk to hasten souring?

As soon as the milk begins to sour, no more fat can come to the surface; therefore, the addition of sour milk would mean less cream. Set in cold water and keep sweet as long as possible.

Is it necessary to use a starter to ripen separator cream? If so, what would you advise using for this purpose; when should it be put in, and what quantity at a time?

Under favorable conditions, it may be possible to get along without using a starter, but the chance of making a uniform, high-grade product is not nearly as good. The surest way is to purchase one of the commercial starters with which the directions come for preparation and use.

Is it best to wait until there is cream enough for a churning before souring and ripening it or should souring begin with the first day's cream?

Cream should be cooled to 50 degrees Fahrenheit or below immediately after skimming and kept cold and sweet until there is a sufficient quantity to churn. By handling this way the cream is uniform. Then, by warming all together to 65 or 70 degrees, adding a prepared sour milk starter and ripening properly, you will have the minimum loss of fat in the buttermilk.

When cream of different ages and ripeness is mixed for churning, the fat of the older cream separates more quickly, and some of the fat in the fresher cream does not separate and is lost in the buttermilk.

Is it advisable to use the gravity milk separator for making butter from one cow's milk?

If by the question is meant the dilution system of adding water to the milk, the answer is no. On the other hand, putting the milk in a can surrounded by cold water and getting the cream by gravity is the next best system after the centrifugal separator.

Is pasteurization of cream before churning desirable? Will the butter be affected or the churning made difficult?

When the cream is pasteurized it is necessary to cool it back to 50 degrees Fahrenheit and hold it there at least two hours in order to solidify the fat. As the lactic acid bacteria are killed by the heating, it is necessary to use at least five per cent. of a good sour milk starter to ripen the cream. Following this method, a more uniform and better keeping quality of butter can be made, but the grain will not be so good.

Will freezing spoil cream for butter-making?

It is better not to freeze the cream, but if properly handled and ripened by the use of a good starter, it will make good butter and just as much in quantity.

What style churn is best? Why does it take butter so long to gather when cream has been heated to the right temperature?

The ordinary barrel churn with plain surface inside is best. When the butter does not gather, it indicates that a fermentation has developed in the cream that no churn can correct.

Why is it necessary to churn separator cream at a lower temperature than cream from milk set in pans?

If the thickness of the cream is the same, there would be no difference. Usually the pan cream is thinner and requires a higher temperature.

Why does it take longer to do the churning at one time than at another, with the cream at the same temperature?

There are different reasons that may cause this trouble; too much or too little acid is the usual cause. Properly ripened 30-per-cent. cream, churned at 56 to 62 degrees Fahrenheit, other conditions being right, will seldom give any trouble churning.

What shall I do with cream that will not come to butter in a reasonable time?

Very little can be done after the cream has been churned quite a length of time and the butter will not come. Study the matter carefully and try to avoid the things that have produced the undesirable conditions. A good starter with cream properly handled will prevent such trouble.

What is the reason for cream being bitter and impossible to churn to butter in the fall? The cream seemed to be bitter as soon as sour.

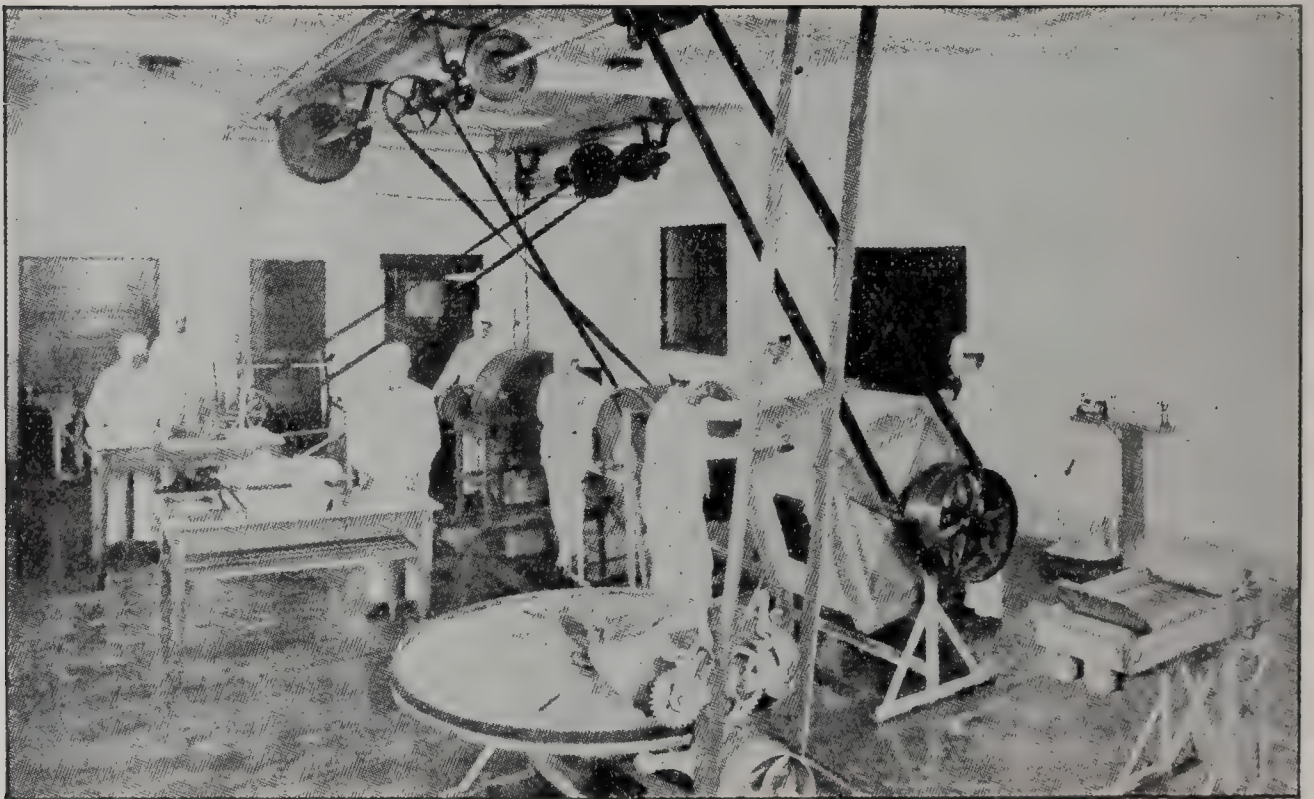
When some cows have been milking a long time, the cream becomes bitter after standing. It is a physiological condition that is not amenable to any treatment that I have ever heard of. The best thing to do is to dry the cow. Sometimes, late in the season, cows fed old, moldy corn fodder and ripe timothy hay in any great quantity with little other food, apparently have a tendency to produce bitter milk, but this shows soon after the milk is drawn.

If the cream from one cow's milk, being kept for butter, sours quickly at a cool temperature, should it be churned then? If the cream remains sweet should a starter be used? How long should the cream remain sweet? If the buttermilk is bitter, is it a sign that the cream was not good?

The churning should be done when the acid develops to the point that the cream becomes thick and has a glossy appearance when stirred. If the cream does not sour properly, a starter should always be used. The time it will remain sweet depends on how cold it is kept. If intended for making into butter it should not be kept over four days. When the buttermilk is bitter it indicates that the cream was kept too long.

Is it possible to get all the butter if the cream is sweet when churned?

With 40-per-cent. cream churned at a temperature of 50 degrees Fahrenheit, it is possible to make just as exhaustive churning with sweet cream as with sour, but with lighter cream and a higher temperature it cannot be done. For most purposes a mild, ripened cream will prove most satisfactory.



Making Butter at State College of Agriculture

Will more butter result by churning one hour instead of one-half the time?

Cream properly ripened and at a proper temperature can be churned in from thirty to forty minutes and recover all the butter possible. It is not so much a question of time as of having the cream in proper condition.

Why is it necessary to churn twice to produce all the butter possible from one or more cow's milk, with or without a separator?

When cream that is not of the same ripeness is mixed, the riper cream will churn quicker, and a second churning will produce the butter from the cream that did not churn. If all the cream is kept cold and sweet and then put together and ripened, it will all churn alike.

What causes the white caps in butter?

White specks in butter come either from dried cream from which the color has faded, or from excessive souring which hardens the casein so that it is not easily removed. Straining the cream will cure the first, and thorough washing will usually remove the casein.

How long should butter stand after churning before packing it?

This depends on temperature and methods. In the farm dairy it is a good plan, after washing the granular butter and letting it drain, to mix the salt with the butter and let it stand thirty minutes, or until the salt is well dissolved. Then work until the surplus moisture is out and the grain is close and uniform. There is nothing to be gained by letting it stand after this is properly done.

How will butter finished immediately after salting compare in weight with that standing three or four hours before finishing?

Experiments show very little change. The tendency is toward less moisture from standing.

By what process is the amount of moisture in butter determined and what per cent. of moisture is legal?

To determine accurately the amount of moisture would require a chemical analysis. This is not necessary or practical under ordinary conditions. Anything over 16 per cent. is illegal.

Is the farmer, selling his butter direct to customers, obliged to have it tested in order to tell whether it contains 16 per cent. or more of water, and how can this be done?

The Department of Internal Revenue made a decision in June, 1911, that the farmer making a small amount of butter and selling his surplus to individual customers is not deemed a manufacturer and is not liable even though it might contain 16

per cent. of moisture. But if the making of butter is his principal business, he is considered a manufacturer, and must test his butter to determine the moisture content before selling it. Apparatus for making this test can be purchased from the dealers in dairy supplies.

Do germs from unclean or impure milk exist in the butter after churning and is there danger to health from the butter?

Where butter is made from properly pasteurized cream, nearly all of the germ life which was in the milk is destroyed by the heat. Where the cream is not pasteurized, much of the original germ life is killed by the acid which is developed and in the struggle for existence which occurs during the ripening process. The germs in freshly churned butter are mainly of the harmless, acid-forming varieties. In some cases enough other forms are present to develop unsavory flavors if the butter is held for some time in storage.

Practically the only danger to health from butter comes from its ability to carry germs of disease, the most common of which is the germ of tuberculosis. Experiments have shown that when the germs of tuberculosis are present in butter they remain alive and in condition to produce disease for at least five months.

What would be the difference in value for cheese-making of milk which tested 3 per cent. butter fat and that which tested 5 per cent.?

The average from a large number of experiments show that when good methods were used the yield of cheese from milk containing 3 pounds of fat in 100 pounds of milk was 8.55 pounds cheese; from milk containing 5 pounds of fat in 100 pounds of milk, 12.90 pounds. In the 3-per-cent. milk the average casein is 2.10 pounds, and each pound of fat in the milk makes 2.77 pounds of cheese. In the 5-per-cent. milk the average casein is 2.90 pounds, and each pound of fat in the milk makes 2.58 pounds of cheese. This shows that the casein increases about one-half as fast as the fat so that we have not quite as large a proportionate amount of cheese-making solids in the higher testing milk, but the percentage difference is small. It is infinitely less than the difference when the pooling system is followed.

What is the best thing to do to rid cows and colts of lice?

It may be necessary to clip the hair in order that application may be made more effectually. Apply some good lice destroyer, many of which are sold on the market. These applications should be made more than once owing to the eggs hatching after the first application.

What is a good formula for condition powders?

100 pounds of old process linseed meal

5 pounds powdered charcoal

5 pounds common salt

5 pounds Epsom salts

3 pounds saltpeter

3 pounds gentian, golden seal or fenugreek

Give a tablespoonful at each feeding.

How can cowpox be cured?

This trouble is usually not severe and runs a certain course, after which the animal usually recovers without attention. Affected cattle should be separated from other animals and every precaution taken to prevent spread of the disease.

What is a good remedy for a cow that gives bloody milk?

If due to injury, not much improvement will be noticed until the abnormal condition disappears. In some individual animals the udder tissue seems to be very tender, and bloody milk results from the bruising and rupture of the small blood vessels. These cases are difficult to treat; the application of liniments and bathing with hot or cold water may be of some benefit.

What is the best medicine for a cow giving thick milk?

It will depend upon the cause. If due to injury, the application of soothing oily preparations, such as camphorated oil or even pure olive oil will be of assistance. The condition will correct itself as soon as the injured tissue has been repaired. In some cases this trouble is due to bacteria in the udder, in which circumstance treatment is unsatisfactory.

What is the best treatment for garget?

Bathe the udder with warm water and rub well. Camphorated oil is valuable as an application. Give the following in

two-ounce doses every three hours: One ounce of liquid extract of belladonna, one ounce of liquid extract of gentian, one ounce of muriate of ammonia, one ounce of nitrate of potash, with five pints of water. This should be preceded by a pint of Epsom salts. Keep the animal blanketed. For loss of appetite or any uncomfortable condition the same dose three times a day will prove a good tonic.

What will remove very large warts from a cow's teats?

Where warts are large it would be advisable to place the animal in charge of a veterinarian, as attempts to remove the growths without proper instruments may destroy the animal's usefulness.

What is the cause of spider teat and how can it be cured? Is there any preventive?

This condition is supposed to be due to a growth in the milk duct due to irritation, or the introduction of bacteria. The cure is unsatisfactory but the removal of the obstruction by means of a looped wire or small knife inserted in the passage is the only remedy. Prevention is not very satisfactory.

What is best for a cow having a teat closed at the lower end making it almost impossible to draw any milk?

It is sometimes advisable in the case of a hard-milking animal where the passage is closed to use the so-called stricture cutter, a small knife concealed in a tube which is inserted in the passage and then opened. This treatment is more often a failure than a success and should not be used except with competent advice.

What causes a scab to form on the end of a cow's teat without any apparent cause, and is there any cure for it?

This trouble is supposed to be due to infection and is often carried from animal to animal by the hands of the milker. The bruise or abrasion in the mucous membrane or skin is so slight as to be unnoticed, but is sufficient for the entrance of the producing cause. Treatment consists of a thorough disinfection of the diseased area and also of the hands of the milker.

Is there any remedy for a very hard-milking cow that at first milked easily?

Sometimes the opening in the teat can be enlarged by the insertion of a plug, but as a rule this is rather a dangerous remedy

in the hands of a layman; germs are likely to be introduced, and instead of a hard milker one may have one with only two or three teats.

Is there danger of the milk from a blind teat spoiling the milk in the other quarter on the same side?

No, unless the quarter of the udder becomes so swollen that it affects the other side. There is no direct communication between the various quarters.

How can a hole in the side of a cow's teat be stopped?

In cases where milk escapes from an injury in the side of the teat treatment is not always satisfactory. Taking a stitch in the opening with cat gut or thread properly sterilized will sometimes cause the opening to heal. A veterinarian should be employed to do this work, as otherwise a condition more serious than the original trouble may result.

Is there any remedy for a cow that leaks her milk?

No. Although the condition may be remedied in some cases by the application of astringents to the udder, it is usually better to destroy the animal.

What is the cattle disease that produces scabs around the eyes and on the nose and head, causing the hair to fall out? What is the cause and how can it be cured?

It is caused by a parasite, and can be cured by any of the coal tar preparations put on full strength.

What can be done for a cow with a swelled knee?

This trouble in cattle may sometimes be remedied by opening the swelling freely. If the fluid which gathers in the bunch does not have free escape, the opening will heal over and a repetition of the condition result. Unless the swelling is very large and interferes with the movement of the animal, it is not advisable to attempt treatment.

How can warts be removed from cattle?

Warts with restricted necks may be removed by knife, scissors or ecraseur (instrument for crushing) after ligaturing to prevent bleeding. Those with broad bases may be treated with caustics with more or less success,—treatment would depend largely on the character of the growth.

What can the farmer do for clover bloat in cows?

Call a veterinarian, and in the meantime give a pound of Epsom salts well diluted as a drench. Keep the animal from eating excessive quantities of clover or other succulent food, especially while it is moist.

What is the cause of milk fever in cows, and can it be cured? If so, how should it be treated? How long will a cow suffering from milk fever live without help?

Milk fever is a condition usually affecting cows just after calving, and invariably seen in cows that are heavy milking animals. The exact cause is unknown. The animal may live for several days after the attack, but as a rule if relief is not given within a few hours, death results. The best treatment is the so-called air treatment, that is, inflating the udder with air filtered through cotton, which is usually successful. Avoid attempting to give medicines to the animal as the throat is paralyzed in this disease and harm may result.

Would it be a good plan to milk out a cow, subject to milk fever, before she freshens?

No. If the cow is subject to milk fever, by no means milk her out before she freshens, or entirely the first 48 hours after. The name "milk fever" is a misnomer. It is really parturient apoplexy; that is, apoplexy at the time of giving birth to a calf, and the distension of the udder seems to relieve the pressure on the veins and is almost a sure cure for the disease. Only in rare cases should a cow be milked out before she freshens, even though she is not subject to this trouble; and not entirely for the first two days after.

What is actinomycosis in cattle and how should this disease be treated?

It is a contagious disease due to a small microscopic fungus, and may usually be cured by the use of iodine applied locally and internally. It is better to consult an expert, and unless the animal is valuable, not to attempt to cure as results are not always satisfactory. The meat of an animal suffering from actinomycosis may be used for food after destroying the parts in which the disease is located.

Where abortion is caused by disease instead of injury to a cow, is there a preventive to stop its spread in the dairy?

Recently aborting animals should be removed from the herd immediately. Remove all foetal membranes and destroy by burning or burying deeply. The stall, gutter and all contaminated surfaces should be thoroughly disinfected with carbolic solution of 5 per cent. strength, or some other good disinfectant. The hips, tail, etc., of the animal should be sponged with a 2 or 3-per-cent. carbolic acid or a creoline solution. An injection of mild disinfectant and removal of all membranes is advisable. The use of ordinary lime in the gutters and about the stable is recommended. As a preventive, the injection under the skin of tablespoonful doses of the carbolic acid solution every ten days or two weeks beginning at the fifth and seventh month and continuing during pregnancy, has been advised, and is attended with some success; although authorities differ considerably as to the effectiveness of such treatment. Animals which have recently aborted should not be bred for two or three months, and great care should be taken to prevent the carrying of the germ causing the disease by the bull from animal to animal. To prevent this, a thorough washing of the sheath after each service with a weak solution of some good disinfectant is recommended.

Will a liberal feeding of frozen corn, ensilage or buckwheat produce abortion?

Such feeding would not, as a rule, cause abortion, but might contribute to produce the condition if animals were not in normal health. It would be impossible for such foods to cause true contagious abortion without the presence of the specific germ.

What causes the scours in cows during winter when they are kept in a good stable, are well cared for and have fresh water before them night and day?

This condition is possibly due to some irritant in the feed. It has been noticed frequently in the case of silage-fed cattle, especially when the corn has been improperly cured or is moldy or sour. The correction of the difficulty is dependent upon the cause; a change of feed would be advisable. The giving of a handful of Epsom salts occasionally may be of value.

What is the best remedy for indigestion in cows?

Indigestion is usually due to improper food. Ascertain the trouble and correct by changing the feed or the quantity given. Two tablespoonfuls of charcoal three times daily in the feed is often of benefit. Tonics or condition powders may also aid in correcting this condition.

Is there a law compelling dairymen to have their cows tested for tuberculosis?

There is no state law compelling this to be done, but the commissioner of agriculture may order examinations to be made if, in his opinion, such action is considered necessary. Local boards of health sometimes put into effect such ordinances.

Explain the state law in regard to bovine tuberculosis: (a) Does the state of New York stand a part of the loss on cattle killed for tuberculosis, condemned by test? (b) What per cent. does the state pay for tuberculous cattle and what disposition is made of the same? Would it not be right for the state to pay the farmer full cash price for cattle killed under the tuberculin or physical test?

The present (1912) Agricultural Law provides that owners of cattle within the state may apply to the commissioner of agriculture for examination of their herd of cattle for tuberculosis. This application must be in writing, and certain promises are made therein by the owner as to the improvement of conditions on his premises, disinfection of stables and precaution to prevent tuberculosis as far as possible. It also provides that animals thereafter bought to add to the tested herd shall be tuberculin tested before being placed in the herd. The test is made under the direction of the State Department of Agriculture, without expense to the owner of the animals, and in case diseased cattle are found they may be taken in charge by the state and destroyed after appraisal. Under the present law, grade cattle may be appraised as high as \$75, and pure-bred, registered cattle as high as \$125. The allowance that the owner actually receives is based upon the conditions found after killing; 50 per cent. of the appraised value being allowed in generalized cases and 80 per cent. of the appraised value in localized cases. It has not been considered advisable that the owner should receive full value for animals killed as all those with lesions are of no real value.

What breed of cattle is most subject to tuberculosis?

No particular difference has been noticed in the various breeds of animals with regard to their susceptibility to tuberculosis.

Can tuberculosis be cured?

The disease may be arrested in its early stages by proper attention being given to check it. In advanced stages curative measures are seldom effective.

With good ventilation, at what temperature should the cow stable be kept to prevent tuberculosis from increasing?

Ventilation has much influence upon the healthy condition of animals, but will not prevent tuberculosis if the disease is already present. The temperature of the stable should be between 40 and 50 degrees, and if pure air is circulated freely the exact temperature is not so important. If tubercular germs are present in the stable it is possible for animals to become infected even if the ventilation is perfect.

Please describe the appearance and action of a cow that has tuberculosis in its earliest stages. What are the first symptoms of this disease in cows? Is there any way of telling whether or not an animal has tuberculosis without using the tuberculin test, and is this test always reliable?

Tuberculosis in its early stages cannot be determined in an animal without using some method of testing, as there are seldom, if ever, any physical appearances that are sufficient to diagnose the disease. After the malady has reached a certain stage, an unthrifty appearance, possibly accompanied by a cough, may be noticed. A tuberculin test is about the only method of determining the existence of the disease. Tuberculin may fail of its object under three conditions:

First, when the disease is in a period of incubation, that is in its early stages. Second, when the progress of the disease is arrested, that is, when it has become walled off from the surrounding tissue and tuberculin apparently cannot reach it. Third, when the disease is extensively generalized. The various conditions under which tuberculin is used and the skill of the person using it, determine to a large extent the accuracy of the results obtained.

Will a cow that coughs always react to the test?

Cattle that cough occasionally should not be considered as tuberculous, but such a symptom is always to be regarded with suspicion.

What rise in temperature is regarded necessary to indicate the presence of tuberculosis?

It is impossible to give a definite rule, applicable in all cases, as to the rise in temperature necessary to constitute a positive indication of tuberculosis in a tuberculin test. In testing animals having a normal temperature previous to the injection of tuberculin, those showing a gradual rise to 104 degrees Fahrenheit or over should, as a rule, be considered as positive reactors. Those showing a rise to a temperature of 103 to 104 degrees Fahrenheit should ordinarily be considered as suspicious. Animals having a normal temperature before injection, and showing a typical rise of two degrees or above after injection, should generally be condemned as diseased. The condition of the individual animal must be taken into consideration, and upon the competency of the person making the test will depend, to a considerable extent, the accuracy of the results obtained.

In regard to the tuberculin test, is there not a number of cases wherein the animal responds and is so slightly affected that it might never injure other cattle; on the other hand what per cent. of serious cases do not respond to the test? Is not tuberculin a rather injurious poison to use on apparently healthy cattle?

A tuberculin test is one of the most accurate tests for the disease known. It does not indicate the extent of the disease, and animals very slightly affected may show as pronounced reaction as those quite badly diseased. Tuberculin in the usual dose has no injurious effects upon healthy cattle, and it cannot possibly produce tuberculosis. It is true that very badly diseased animals may not show rise in temperature after tuberculin is injected.

Does a cow which is free from tuberculosis ever respond to the tuberculin test?

Animals free from tuberculosis probably never respond to the tuberculin test if they are in a normal condition when tested. Occasional cases occur where the diseased area is not found, due to the diseased tissue being located in some part of the body

which is not examined, or because the diseased area is so small as to be difficult to find with the naked eye.

Should apparently healthy cows be tested with tuberculin?

It depends upon conditions. If milk from tested animals is in demand, and if the dairyman can secure a larger price for the milk, the test would probably pay as a business proposition. Unless there is reason to suspect tuberculosis in the herd, or something is to be gained by testing, there is no particular advantage except as a precaution.

What is the condition of a cow's udder affected with tuberculosis?

If the disease is localized in the udder, lumps or abscesses may form. If the disease is confined to other parts of the body, there may be absolutely no unnatural conditions in the udder.

Would the offspring of tuberculous cows have a tendency to contract the disease?

No. Calves from tuberculous mothers are no more subject to tuberculosis than others. The disease can be transmitted only by the tubercle germ gaining entrance into the tissues of the young animal, and if the calf is immediately removed from the mother at birth there is little possibility of its having contracted the disease.

Are the germs of tuberculosis continually in the air?

Not necessarily, but in badly infected stables where dust is moving about, the germs are very apt to be carried on dust particles.

Does thorough cooking destroy the tubercle germ?

Heating to a boiling temperature is considered sufficient to destroy germs of tuberculosis.

Is the meat of an animal affected with localized tuberculosis fit for food?

The United States meat inspection regulations provide that carcasses of cattle examined should be destroyed for food if certain conditions exist. Where tuberculosis is limited to certain organs of the body it is not considered necessary to destroy the entire carcass, there being no danger of communicating the disease to persons who might eat the flesh of the animal. The loss resulting from the destruction of all carcasses that showed but slight lesions would be very great and there is no danger to the public by the present method.

Why do farmers' children seldom contract bovine tuberculosis from drinking milk? If there is danger of tuberculosis being carried from animal to man by means of milk, why are not men who care for cows in danger?

The conditions under which people or animals live have much to do with their resistance to infectious diseases. As a rule, the sanitary conditions in cities are not very satisfactory, especially among the poorer classes; therefore disease is more prevalent. Tuberculosis is no exception to this. Undoubtedly many children in the country do die from this disease, but often it is not properly diagnosed, and statistics in relation to cause of death are not as accurately kept as in the city. Danger to attendants from tuberculous cattle is not great, and adults are not as likely to be infected as children.



COW TESTING ASSOCIATIONS

What is a cow testing association?

A cow testing association is a number of dairymen with about five hundred cows who unite in hiring a competent man to visit each farm once a month to weigh, take samples and make a Babcock test of each cow's milk. He makes a complete record of the quantity of milk and butter fat produced by each cow in twenty-four hours, and the quantity of food she has consumed. This is multiplied by the number of days in the month, and a complete record is left with the farmer showing the number of pounds of milk each cow gave, the number of pounds of fat, different kinds of food consumed and its cost, the profit over feed, the returns each cow gave for a dollar's worth of feed, and the cost of producing a pound of butter fat and a hundred

pounds of milk from each cow. The members cull out the boarder cows which increases the average production of both milk and butter fat of the other cows in the herd. Many herds have made an increase of more than 1,000 pounds of milk per cow in a year after joining the association. It is a fact that very few farmers keep any kind of a record of the individual cow. A dairy may be productive and still have in it a number of boarder cows. We found a dairy in the Delhi Cow Testing Association that made a profit of over \$800 from 35 cows. The best 23 cows in this herd would have made within \$32 as much profit as the entire herd. The cost of having these records kept in a cow testing association is \$1 per cow and board and lodging for the tester one day each month.

Would you advise organizing a cow testing association?

There is nothing that will be of more value to a dairy community.

What does it cost to keep a cow a year? How much should be received to realize a profit?

To keep a cow a year will require at least two tons of hay or its equivalent and a ton of grain feed, besides pasture. At this year's prices, the hay is worth \$20 per ton and the grain at least \$30. This would require \$40 for roughage, \$30 for grain and at least \$5 for pasture, making a total cost of \$75 for feed at present prices. We found in the Delhi Cow Testing Association in 1910 that the labor cost per cow was \$20.84, the depreciation on the herd \$8.45, and the interest \$3.25, making a total cost for the year of \$107.54 per cow at the prices named. I think it would be safe to say that at present prices a farmer should receive at least \$100 worth of milk before considering his profit.

How much milk should a cow give in a year to produce it at a profit?

That will depend upon the price at which it is sold and the cost of its production. The milk must sell for enough to pay for feed, labor, depreciation and interest before the cow begins to make a profit, and with hay and grain at 1912 prices this would be not less than \$100 for a year. At Borden prices for 1911 it would take perhaps 6,000 pounds of milk, which is

about 2,000 pounds more than the average New York State cow produces. In other words, the average New York State cow lacked in 1911-12 \$33.60 at Borden's flat price of paying expenses of feed, labor, depreciation and interest.

Would you advise dairymen to keep an accurate record of what their dairies are doing, and also an expense account?

What other business except farming could be run without an accurate record of the production and cost of production. Are not business methods as necessary on the farm, and especially in the dairy, as in any other business? The dairyman is a manufacturer, converting the raw material—the food consumed—into the finished product in the shape of milk, butter, or cheese. He should first have a good machine; be sure his material is of the best; know the exact quantity of material used and its cost; the amount of money invested in the business, and the annual depreciation on it. He also should know the quantity of finished product turned out in the shape of milk, butter or cheese, and the price it brings. Having these figures showing the production and its cost, the dairyman can readily determine the amount of profit or loss in the business.

What are some of the causes of a wide variation in the tests of milk from the same dairy,—say within a period of a week or a month?

This is sometimes hard to account for. We know that nervous excitement, a sudden change of temperature, and many other things will cause a temporary change in the butter fat test of the herd or the cow. A change of food will affect it for a time; but the cow will gradually come back to her natural quantity of fat.

Would it not pay most farmers to dispose of their scrub cows and get one-third as many good ones?

It would certainly pay to dispose of unprofitable cows, whether their number were replaced with better ones or not. When a man is keeping cows whose product does not pay for their feed or the labor expended or money invested in them, the more he has the worse he is off. If these unprofitable cows, furnishing milk at a loss to their owner and filling up the markets, were eliminated, the question of the price of milk would be very easily settled. The cow testing associations have thoroughly demonstrated the truth of the above.

What kind of scales is best for weighing milk? Are spring balance scales accurate?

A spring balance scales made by C. Forschner and sold by all first-class dealers in dairy supplies is accurate, and can be purchased for a moderate sum. There are two hands, one of which may be set to correspond with the weight of the pails, which can easily be made uniform by the addition of a little solder to the bottom; and the weights are recorded in tenths, which are very easy to compute.

BARN CONSTRUCTION

What kind of roof would you advise putting on a new barn?

This depends very largely on local circumstances. In many parts of the country the slate roof is reasonable in price and especially desirable. Besides being very durable, it has the additional value of resisting flying sparks. Some kinds of metal roofing are very good, but should be painted frequently.



A Good Type of Barn

What is the best material for a stable floor?

Concrete floors are to be preferred for a cow stable, but in the case of horses it is wise to build in such a way that cheap

lumber can be used on top of the concrete for horses to stand on. Concrete, however, should be under the entire floor, thus making the stable more sanitary. The wood material need not be so expensive and will wear much longer if it has a good concrete base to rest on.

What do you think about cows standing on concrete floors?

There is no floor so durable, so cheap and so sanitary as concrete. When the concrete is placed directly on the earth the floor is cold and more or less damp; but if a heavy building paper is put between the upper and lower layers of concrete, thus stopping the capillary attraction, there will be no dampness coming from below. Such a floor will be warmer than any of wood, where there is more or less cold air circulating beneath it. In fact, this will absorb the heat of the body of the animal. Of course such floors are hard and should be thoroughly bedded.

Please describe the King system of ventilation.

This system of ventilation takes its name from the author, Professor King, of Wisconsin. To work well the stable must be perfectly tight. There are ventilating shafts extending from the floor to above the peak of the roof in sufficient number to admit of a free circulation of air, the cold air coming in through a register not very far from the top of the wall or plate. The foul air being the heavier, descends to the bottom and passes out through another register or flue just a little above the floor. These shafts must be tight and on both sides of the stable. When the building is tight and the flues properly arranged, the draft will draw a cambric handkerchief into the chute. It is usually unwise to attempt to put this system in an old building. (See Wisconsin Experiment Station Bulletin No. 164.)

In putting in the King system of ventilation would you advise having the out-take shafts start at the level of the ceiling or extend down into the room?

It is absolutely necessary that the ventilating shafts should extend to the floor, for this is where foul air passes out.

Please explain how to ventilate a new barn where horses and cows are kept together.

If horses and cows are kept in the same building, I would advise a tight partition between so that they are practically

separate. The King system of ventilation where stock is kept is probably the best known. A liberal allowance of muslin curtained windows works very well, but if the muslin curtain is used care should be taken to have plenty of light.

At what temperature should a modern dairy barn be kept?

From 40 to 50 degrees Fahrenheit.

Is it possible to have good ventilation and still maintain a comfortable temperature for stock?

Yes. If muslin curtains are used the temperature need not be over two or three degrees lower than it would be without them. If the King system is properly installed the ventilators take the cold air from the floor, which has a tendency to bring the warm air from the ceiling and make the stable warmer.

Would it be advisable to have cloth ventilating curtains on both the east and west sides of a dairy stable?

Yes, it is advisable, because in that case there would be a better circulation of air according to the prevailing wind. Just how many of these ventilating cloths will be needed depends altogether on the size of the dairy barn and the number of cattle kept in it. It is safe to err on the side of having abundance, because there is very little difference in temperature between the cloth and glass.

How many feet from the manger to the gutter should a cow have to stand on?

This depends on the size of the animal, and would probably range from four feet to four feet, eight inches; possibly more in the case of large animals.

How high should the ceiling be from the floor of a cow stable?

This depends on the width of the stable; one 36 feet wide being preferable. If there are no partitions between the cows, each cow should be allowed about three feet, four inches, depending on her size. In this case, if the stable is entirely filled and not too much space given to alley-ways, it would require a height of about eight feet. At any rate, 600 cubic feet of air space per cow should be allowed in the stable.

Is it best to have partitions between cows?

Yes, a partition prevents the cow from swinging around too far on the platform and soiling herself, and also prevents one cow stepping on another's teats.

What is the very best way to fasten cattle?

All things considered, the swinging stanchions so arranged that there is a link or device at the top and bottom to permit a couple of inches play when the cattle get up or down is best. They are simple, inexpensive and humane.

Can farmers afford to buy absorbents for use in cow stables? If so, what is best for this purpose?

Ordinarily, farmers should be able to supply absorbents without purchasing, such as leaves, chaff, swamp muck, coal ashes — in fact any waste material of the farm can be utilized to good advantage in this way. Falling short of such farm products, it certainly will be better to purchase than to allow the liquid, which contains over half of the plant food to go to waste. Very often sawdust or shavings can be purchased. With these, or any absorbent, it is wise to use acid rock mixed with some of the floats or untreated rock, a small handful behind each cow. The former will help to fix the ammonia in the manure and both will add needed plant food.

ANIMAL HUSBANDRY

Horses

Sheep

Swine

*“He prayeth well who loveth well
Both man and bird and beast.*

*He prayeth best who loveth best
All things both great and small;
For the dear God who loveth us,
He made and loveth all.”*

COLERIDGE

HORSES

"A horse! a horse! my kingdom for a horse!"

SHAKESPEARE

What breed of horses is best adapted to farm work? What size team would you advise for general purposes where there is to be only one team on the farm?

Choose the breed that best suits the conditions and the markets; there is no best breed or type. The lighter types naturally belong to land devoted to grass, to dairy industry, to fruit growing and to market gardening, where but little plowing and other heavy work is required, and the necessity of reaching the market, the station or the creamery requires quick-moving horses. On grain farms, where there is much plowing and other heavy work to be done, heavy horses are needed. On general-purpose farms, the draft horse finds his true place. Draft horses can operate large machinery to advantage, thus saving manual labor and cheapening the cost of production, thereby increasing general-farm profits.



Three-year-old Fillies

What constitutes a pure-bred Percheron horse? How many crosses will breed out common stock or make full blood?

In order that a horse may be classified as a "pure-bred" Percheron he must have both sire and dam recorded in the Percheron studbook. At the present time, there are no exceptions among Percheron studbooks of standing, although it was

formerly customary to admit animals with five to seven top crosses.

Would it be better to keep a number of cheap horses or fewer of a better quality on the farm?

Because of the profit to be derived from raising a few colts, it would seem to be of advantage to the average farmer to keep brood mares with which to carry on his farming operations. These mares should be of good quality so as to produce colts that would command a premium on the market; and it will cost as much to maintain a cheap as a good horse.

Which is more profitable to raise — mules or horse colts?

The thirteenth United States Census shows that the average price of mules exceeds the average price of horses by approximately 20 per cent. Thus, if the farmers were sure of a market, they probably would realize a greater profit from the raising of mules, although it should be remembered that the demand for mules is limited. As in the raising of horses, the greater profit is obtained in the production of the larger mules.

What will break horses of kicking? What will prevent a horse from kicking in the stall? What is the best way to start a balky horse?

Kicking is a very dangerous vice, and balking a very aggravating one. Such vices are rather difficult to overcome, especially after the horse becomes confirmed in the habit. While it is possible to train any horse, no matter how vicious, so as to overcome such habits, the process is long, a description of which would require many pages. The appliances used and methods employed are clearly described in "The Training and Breaking of Horses," a book published by the Macmillan Company, 64-66 Fifth Avenue, New York City.

Is it advisable to use "blinds" on bridles, or is it better and safer to train a horse to drive without blinds?

While there is much discussion as to the advisability of using blinds in training, it should be remembered that the horse's range of vision is much more limited than that of man, and it would seem very unwise to still further restrict the sight of the animal. In training, it is the business of the master to familiarize the animal with all objects he is likely to see later in life.

Because of the great importance of having the horse view objects from either side and at all angles, the training should be accomplished with an open bridle.

Would you advise putting plank over the cement floor for horses to stand on?

When the stable floor is of cement the stalls should be planked, as there are many objections to having a horse stand and lie down on cement. The cement under the plank need not be as thick as in other places throughout the stable.

Is it a good plan to have horses stand on manure in box stalls?

Because of the importance of sound feet, it is very poor policy to have a horse standing on manure. Box stalls should be mucked out each day and thoroughly cleaned once a week.

Is it beneficial or harmful to the coat of a horse to rub with a kerosene cloth?

The use of a small amount of kerosene on the coat of a horse is of advantage, since it has a stimulating effect upon the pores of the skin and makes the coat more glossy.

To what extent would you advise working a mare when near the time of foaling? Is it safe to work a mare that will foal July 1, through the spring farm work?

Moderate work is not only harmless, but positively advantageous to mares in foal, providing proper care is taken not to overload them. It is much better than to keep them tied in the stable, for in that case they suffer for want of exercise; or permit them to run at large in the fields with other horses where they are exposed to accident resulting from racing, playing or fighting each other. If proper care is taken, the mare can be used safely at the ordinary work of the farm up to the very day of foaling. As the time approaches, it is important that the work be not heavy or the pace rapid, and she must not be fretted by the other horse, or by rough, inexperienced hands.

Is there any harm in cutting the hair from horses' legs?

The clipping of hair around the fetlocks of horses exposes the skin to injury, and is often the cause of scratches or grease heel. Nature evidently intended that the long hair on the horse's fetlocks should protect them against cold, mud or injury. The conditions under which the animal is used will determine to some extent the danger from clipping.



French Coach

What can be used for a horse that is apparently well but has a rough, scaly skin?

This may be due to various causes, such as indigestion, bad teeth or general lack of condition. Examine the teeth carefully and have them treated if necessary. The use of condition powders may be advisable if the animal shows no other conditions that would account for the trouble.

What kind of condition powders are best and how often should they be given?

It would depend upon symptoms shown by the animal as to what condition powder should be used. Most proprietary powders on the market contain large quantities of filler, which has no value as a remedy. It is advisable to buy drugs and mix them yourself, or have a veterinarian do so. It would be impossible to give intelligent directions without knowing what symptoms the animal shows.

What is the best way to build up a partly worn-out horse?

To build up a horse that is run down, slightly lame or otherwise out of condition, comparative idleness is almost essential. If in season, there is nothing better than a good pasture, well watered and well shaded. The horse in feeding will take some exercise, the morning dew will improve the feet, and pasture constitutes the best of food. If convenient, the animal should be fed grain in addition. After the horse has regained his strength he should be worked gradually. The mistake is often made of putting the animal to work too quickly, thus offsetting the good effect of the rest.

What is the best way to overcome overreaching and clicking of a horse in traveling?

To prevent overreaching first remove the cause if possible. As a rule, after the horse has been put in good condition, the mouth properly bridled and the feet properly shod there will be no further difficulty. In some cases, however, it may be necessary to employ artificial means. The principle is to hasten the action of the forefeet and to encourage a slow or dwelling movement of the hind ones, in order to allow the former to get out of the way of the latter. The action of the forefeet can often be hastened by slightly rounding off the toes of the front shoes which has a tendency to encourage a horse to raise his feet quickly. On the other hand, the action of the hind feet can often be retarded by raising the toes of the hind shoes and lowering the heels. The toes of the hind shoes should not project too far apart.

Is there anything that will toughen horses' feet so they can be driven without shoes?

In most sections of the country horses cannot be driven without shoes, as their feet are not hard enough to withstand the wear.

Would you advise leaving the shoes on farm horses from fall until spring as long as they hold well and look good?

As a rule it is not safe to leave the shoes on from fall until spring. The hoofs grow out to such a length that it throws the foot out of its proper axis, thus causing an overloading of cer-

tain parts, which results in unsound legs. Because of the importance of sound feet and legs, the feet should be shod once each month.

How should a horse be shod to prevent forging?

One method is to use a rather short shoe, allowing the toe to project over the shoes somewhat, and raise the heels by having a long calk. The shortening of the hoof by paring the toe sometimes prevents. A careful, experienced blacksmith can remedy this condition.

What effect, if any, does the burning of the horse's foot by a hot shoe have?

The burning of a horse's foot by a hot shoe is not only cruel but very dangerous, particularly if burned deeply. The parts under the hoof are very tender and the hot hoof continues to burn these sensitive parts long after the shoe has been withdrawn. Once these tender parts become inflamed, as they will by burning, they are very hard to cure because of their location and the difficulty of reaching them with medicine and disinfectants.

Is it advisable to oil a horse's foot after shoeing?

If the hoof is very dry and brittle, a good hoof dressing will be of benefit. If the animal is being used on moist soil, it is unnecessary to use hoof dressing in most cases.

How often should petroleum jelly be applied to horses' feet.

Hoof dressings should be applied once or twice a week if the animal is not exposed to moisture while working.

Should a farmer have his horses' teeth examined if the horses are doing well and show no signs of trouble with their teeth?

Not necessarily, for most horses show the effects of bad teeth very quickly.

Is the continued lengthening of a horse's teeth a healthy or an abnormal condition?

The growth of a horse's teeth is a normal process. Nature has provided that as the surfaces of the teeth wear away from use, the growth from the root will replace the wear.

What shall we do with the horse's teeth that are decayed — extract or file?
 By cutting off a long tooth does it expose the nerve so as to be painful?

Horses' teeth require constant attention. The upper jaw is somewhat wider than the lower so that the teeth are not perfectly opposite and sharp edges are often left unworn on the inside of the lower molars and on the outside of the upper, which may cut the tongue or cheeks. These sharp edges when found should be rasped down with a guarded rasp. The rasping of a long tooth does not expose the nerve. Occasionally decayed teeth will be found, which should be extracted with forceps.

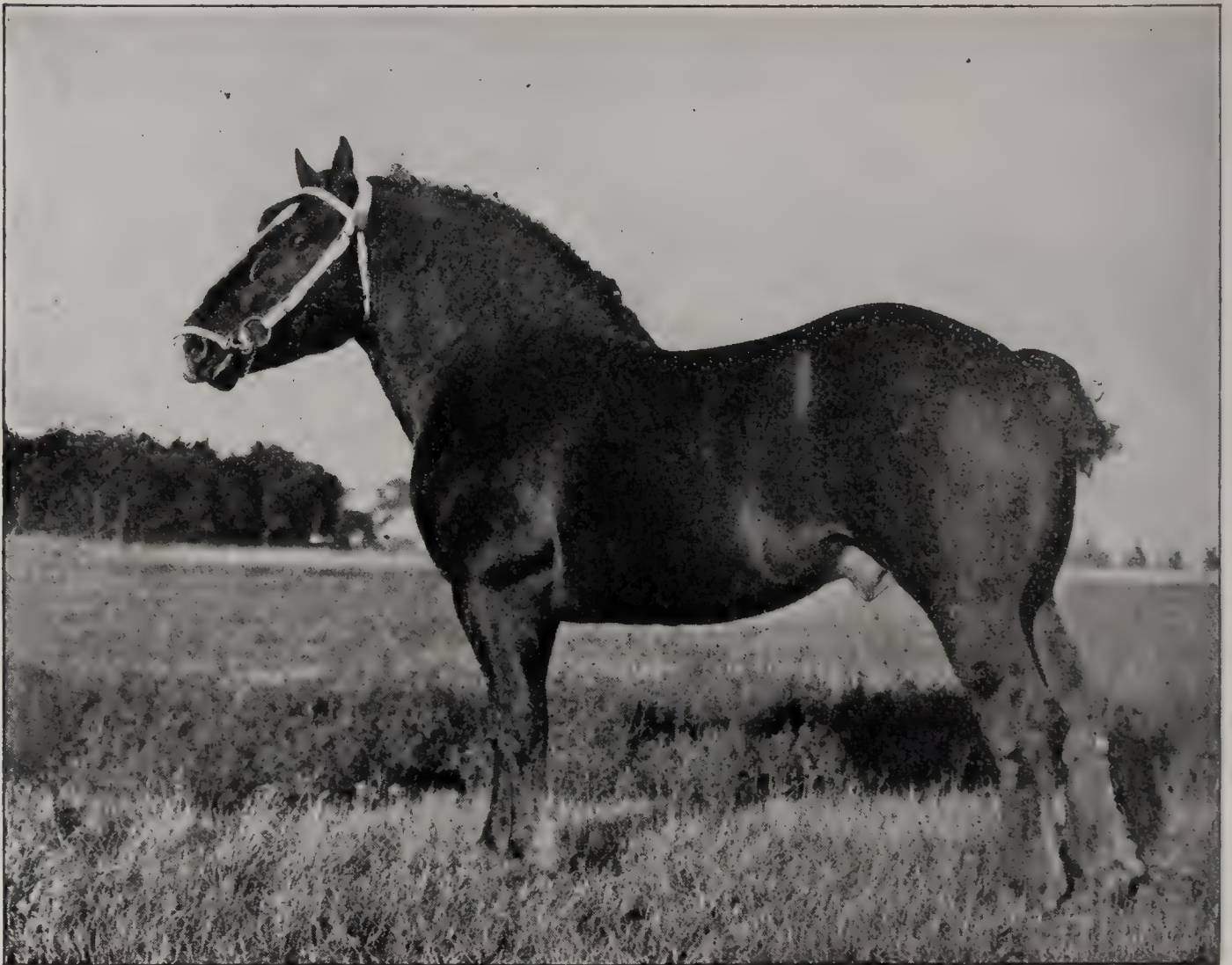
What would be a good balanced ration for a horse?

In general, the working horse should be supplied with something over two pounds of food daily for each hundred pounds of weight. Of this, about one-half or two-thirds — the exact amount depending on the severity of the labor performed — should be grain in some form. If the work is exceedingly heavy, the grain in the ration should be increased and the hay diminished; whereas, if the work is light, the grain should be diminished and the hay increased. The morning and noon meal should be comparatively light, consisting mostly of grain, so that the heavy feed will come at night when the animal has sufficient time to eat and digest the feed, and is not obliged to go to work immediately after eating.

While the foods that enter into the ration may consist largely of such as are available, yet a grain mixture consisting of half oats and half corn, by weight, fed in connection with timothy, clover, alfalfa or mixed hay, cannot as a rule be greatly improved upon, all things considered. In feeding the working horse a very good practice is as follows:

For the morning ration feed one-fourth the daily allowance at least one hour before going to work. It should be in condition to be easily and rapidly consumed so as to be well out of the way when the horse is led from the stable. After being watered, he is ready for the morning's work. At the end of five hours of labor he should be given the midday ration. When he comes to the stable he should have a drink of fresh, cool water, but see that he does not drink too rapidly or gorge himself if very warm.

Now feed another quarter of the day's allowance and, if possible, remove the harness so that the animal can eat his meal in quiet and comfort and gain a few minutes of rest. He should have one hour to consume the meal. After being watered again he is ready for the afternoon's work. As in the morning, after five hours of labor, he should be fed the evening ration. When the horse comes to the stable in the evening, tired and warm, he should, first of all, be given a fresh, cool drink, care being



Belgian

taken that he does not drink too rapidly. He is now ready for the remainder of the day's allowance. Unharness at once and when the sweat has dried, give him a thorough brushing.

The amount of grain and hay that should be fed will depend entirely upon the conditions. As a general rule, a ration consisting of 10 pounds of grain and 12 pounds of hay will be found sufficient for a 1,000-pound horse doing moderate work, while a ration consisting of 15 pounds of grain and 10

pounds of hay will prove ample for moderate work. A ration of 20 pounds of grain and 10 pounds of hay will suffice for a 1,000-pound horse doing the most severe work. If for some reason the horse is forced to stand idle in the stable for a few days, the ration should be decreased, otherwise he will become stocky and his legs become swollen and stiff.

What would be a good, cheap, satisfactory ration for idle farm horses through the winter?

The economic wintering of idle horses is of first importance. This is emphasized by the high price of foods. Because of this high cost, a few farmers err by turning their horses out to rough it through the winter, feeding them cornstalks, straw and the like, thus often inducing "straw colic." But by far the greater number of them make a mistake by denying their horses sufficient exercise, keeping them too closely confined in the stable, and overfeeding on grains and rich hays. This method is as likely to produce disease as the former, though of another kind.

In wintering the idle horse there are two factors that must constantly be kept in mind — supplying sufficient nutrients to keep the horse in condition and permitting an abundance of exercise.

It is more economical and perhaps advisable to turn the idle horse into a lot, providing it affords good protection, such as a shed open to the south, rather than to confine him too closely in the barn. This affords the horse an opportunity to take much-needed exercise, and as winter comes on he will grow a heavy coat of hair, which will afford excellent protection.

The amount of food to feed will depend on the kind. If the forage consists of good timothy, sweet, clean clover, or alfalfa, the amount and kind of grain will vary considerably from that necessary to maintain the horse if straw or cornstalks constitute the roughage. Thus, if clean timothy, clover or alfalfa is used, five pounds of grain — two in the morning and three in the evening — per 1,000 pounds live weight, will usually prove sufficient. If timothy is used, it should be fed *ad libitum*, though it may be necessary to limit the clover or alfalfa, particularly if the horse has a tendency to gorge himself. On the other hand, if the roughage consists of very coarse materials, such as straw,

stalks and the like, it may be necessary to increase the grain, perhaps six or eight pounds per 1,000 pounds live weight.

For best results the grain may consist of half oats and half corn by weight, ground together, though one may use such foods as are available. While as a rule, corn is not considered a very good horse food, it is less objectionable if fed in the winter, as the horse then needs much heat-producing food.

If available, succulent food, such as carrots, roots, potatoes and especially corn silage, if of good quality, may prove very economical as a supplementary food in wintering idle work horses. If carrots, roots and potatoes are used, grain and hay should be fed in addition, and if the corn silage is used, hay alone should be fed in addition. Such succulent foods have a very beneficial effect upon the physical condition of the horse. Probably the horse thus cared for should be provided with somewhat warmer quarters than where the succulence is omitted.

It is better to have the digestive tract of the idle horse well distended with hays rather than contracted, as would be the case if grains possessing the requisite nutrients were supplied. If the protected area is kept dry and well bedded, the horse can be comfortably wintered in this way at much less expense than by stabling. Full grain feeding together with some work should begin six weeks before spring work starts to put the horse in condition.

Other things being equal, will it take any more feed to keep a sixteen-year-old horse than it would an eight-year-old? Can a young horse get more out of his feed than an old horse?

Horses that are aged would, on general principles, take more feed, as their teeth are not generally in as good shape for grinding the food, and hence would not receive so much nutrition from it.

Which is the better way, to feed horses whole grain or have it ground?

The horse's stomach is small and for this reason not capable of doing the work after it has received the food as can that of the ruminating animals like the cow. It requires energy for the horse to grind the food in the mouth, and this usually can be done more cheaply by the millstones than by the horse's grinders.

Which is the better and more economical for a work or driving horse, a given quantity of grain at \$28 a ton with plenty of hay at \$22 a ton, or straw at \$11 a ton with more grain at the same price?

The average driving horse, as well as that used for slower work, is given too much bulky food. It would be wiser to feed a moderate amount of hay with a less amount of grain than the less digestible straw and more grain, unless the straw was at hand and the hay had to be purchased.

Are oats fed on the straw economical and good for horses?

As a rule, horsemen do not like to feed oats on the straw to horses. Green or even new oats are not considered desirable for the horse, and after the oats have undergone fermentation the straw contains very little nutritive value. While oats on the straw are not harmful, it is perhaps desirable that they be threshed and fed as grain, especially to hard-working animals.

Do oats and peas make a good feed for a work team?

Ground oats and peas constitute a very good grain ration for the horse, and is extensively fed in the North, where the pea field flourishes. Peas should always be ground and fed in connection with some other grain, as oats, bran, middlings or the like.

Is rye bran a good feed for a horse; and if so, how much should be given at a feeding?

Rye bran is an excellent feed for horses. The quantity that should be fed depends on how much work the horse is doing — from twelve to sixteen quarts a day being a reasonable amount for an active horse. Being somewhat sticky when fed alone, it is better to combine it with some other feed. At present prices (1912) an excellent ration may be made with one part by weight of rye bran, one of dried brewers' grains and one of corn-meal.

What is the value of rye ground with oats for horse feed as compared with corn?

While ground rye and oats give very satisfactory results when fed to a working horse, yet the ground rye is probably inferior to corn-meal. The rye is not palatable and not so universally relished by the horse as is the corn-meal, although its nutritive value ranks high.

Is there any danger in feeding rye to breeding animals?

Yes. There is sometimes an ergot on rye that is injurious to the horse if too much is fed.

Is it profitable to feed oil meal to work horses?

Yes, a small quantity.

Would it pay the ordinary farmer to buy cottonseed meal to feed horses?

Throughout the entire country, except in certain rather limited southern districts, cottonseed meal is looked upon with much disfavor by horsemen. In general, it would not pay the New York farmer to buy cottonseed meal to feed horses.

Is buckwheat good to feed to horses with corn and bran?

Compared with corn or oats buckwheat is too expensive to feed the horse; otherwise, if ground and fed in limited quantities, it gives very good results.

Is it advisable to feed corn to western horses?

Western horses should be fed corn or food which they have commonly been fed until they become accustomed to eastern conditions and foods.

Is corn on the ear a good winter feed for horses?

Perhaps better results would be obtained from feeding shell-corn supplemented with oats or some other feed, although ear-corn fed in connection with clover, alfalfa or mixed hay proves a very satisfactory feed. Under certain conditions, it is to be recommended, particularly if the shelling of the corn is expensive. Corn is commonly fed on the ear throughout much of the Corn Belt.

Will the by-products from split-pea factories make good feed for horses, hogs and sheep?

Yes; these are excellent, and usually the price is commensurate with their feeding value. They are not as palatable as some other foods, and need to be combined in order that animals may eat them readily.

Is alfalfa good for horses and how often may it be fed?

Sweet, well-cured alfalfa hay makes a very good forage for the horse. It may be fed similarly to clover, timothy or mixed hay, but is subject to the same criticism as clover; if fed to

excess, it may affect the horse's kidneys. In certain sections of the West alfalfa constitutes the sole dry forage of the horse.

Is it advisable to feed ensilage to horses,—especially to a mare that is feeding a fall colt?

Experience with feeding silage gives conflicting results. Good silage, if fed moderately, usually gives good results, especially when fed to idle horses, or horses that are being conditioned for the market. So far as known, it has never proved injurious to a foal when fed to its dam, although carrots are preferable as a succulent food for dams nursing foals. Because of its bulk, silage should not be fed to hard-working animals.

Will ensilage be injurious to a horse or colt that is not working? If not, how much per horse may be fed?

A small amount of ensilage can be fed without injury and some profit to an idle horse or colt, so long as it is entirely free from any germs of mold. While a small amount of mold will do no injury to a cow, it is usually fatal to a horse.

Would you advise feeding corn stover to horses?

Yes; bright corn stover is good feed for horses and very much better than an excessive amount of hay, particularly for those that are idle.

Is it harmful to water a horse immediately after eating oats?

If animals are accustomed to being watered after feeding oats, there is usually no injurious effect. The theory is that water washes the stomach contents into the intestines before digestion is complete, thereby producing indigestion.

If a horse will not drink before eating his morning grain ration, how long should he stand after feeding before being watered? Which is the proper way to feed horses—grain first, then hay or straw; or hay first and then grain?

It is advisable that animals be watered before being fed, or that an interval of an hour or more intervene between the feeding of grain and hay and watering, owing to the food being washed from the stomach before being properly digested. The question as to whether grain should precede hay is of no very great importance.

What is the theory of the danger to a horse if watered or fed grain when warm?

The presence of food in the stomach produces a sudden activity in digestion which may cause colic or other troubles. Cold water may produce founder or other disturbances, because of the sudden contact with the warm, over-heated tissues.

What causes horses to have heaves? Is there any permanent cure for this condition?

Heaves, or asthma — also called broken wind — is a peculiar condition found in horses as well as other animals, the cause of which is not clearly known. It is often due to feeding large quantities of dry, dusty hay, which distends the stomach and interferes with proper lung action. If this is continued, the case becomes chronic, the structure of the lung tissue and air passages become modified, and cure is practically impossible. The use of drugs usually merely disguises the trouble, few of them having any curative value. Arsenic is one of the best known remedies. It is used in what is known as Fowler's solution, and the dose is an ounce three times a day in the feed. Avoid the use of dry, dusty feed, and limit the quantity as much as possible. The moistening of hay fed to asthmatic horses will often be of assistance.

How would you feed a horse that has the heaves?

The horse troubled with heaves should be fed a ration consisting largely of grain, at least as much grain as hay by weight. The grain should be fairly laxative and the hay free from dust. Sometimes good results are obtained by sprinkling the hay with limewater just before feeding to the horse.

What remedy is there for sores on the top of a horse's neck under his collar?

These are difficult to heal. Thorough washing with a good disinfectant is advisable, and healing will be much more rapid if the animal can be allowed to rest or is not used in such a way as to irritate the unhealthy places. The failure to heal in cases of sore shoulder or neck in horses is due to the continual irritation produced by the collar, and possibly the debilitated condition of the animal. If the skin is not broken, bathing the shoulder frequently with clean, cold water may be of value.

What is the best application for gall sores? Can anything be done to toughen horses' shoulders to prevent them?

The application of sugar of lead — twenty grains to an ounce of water — or an oak-bark solution is good to toughen horses' shoulders. If the skin is broken, any good disinfecting solution is of value.

Is there any cure for fistula? How should it be treated?

Fistula in the shoulder may usually be cured if it has not existed too long. A competent veterinarian should always be employed to treat this trouble. It would be impossible to give a specific method that could be used by a layman.

What treatment is advisable for a horse that knuckles in front?

Knuckling is rather difficult to overcome unless it be during the first stages of the trouble. First of all, the horse needs rest. Careful attention should be given to the condition of the feet and to the manner of shoeing, while time should be allowed for the tendons to become restored to their normal state and for



Percheron

the irritation caused by excessive stretching to subside. A shoe with a thick heel will contribute to this. If it fails, more strenuous methods should be used, such as blistering and line firing.

Can anything be done for a horse that is over on his knees?

A horse over on the knees may be improved by allowing him to run to pasture for a season. The cutting of the tendons at the back of the legs is a surgical treatment that is sometimes successful, and blisters along the tendons are also of value. Unless the animal is young, treatment is usually hardly worth while.

What is meant by pavement-sore horses? What chance is there for their recovery if put to work on the farm?

“Pavement-sore” is a term applied to animals that have become lame by city work. Bad shoeing, standing on hard floors and driving on hard or rough pavements is usually the cause. They may often be rendered suitable for farm work by paring the feet, putting on plate shoes and shoeing frequently, or turning to pasture for a time until the foot has returned to its normal condition so far as possible.

What is the cause of a horse being pigeon-toed? How can it be corrected?

Horses that are pigeon-toed generally become so from having the hoof broken off on the side when colts, or from improper shoeing or attention to the hoof. Careful shoeing and paring of the hoofs will assist in correcting the trouble. Lengthen the outside of the shoe, build up the outside of the hoof with a thick shoe and bring it in direct line with the body.

What treatment is advisable for a curb?

If the animal is not lame from the curb, great care should be used in treatment. A light fly blister may be sufficient. The use of strong blisters may produce conditions more difficult to cure than the original trouble. If the horse is valuable, better have expert advice.

What should be done for a horse that is calked?

If the animal shows evidence of pain, call a good veterinarian. This injury may be serious if the wound is not properly cleansed. The introduction of hair or dirt usually produces pus, the accumulation of which results in a serious condition, since the peculiar construction of the hoof of the horse does not allow its escape. The wounds should be cleansed out thoroughly, a good disinfectant, such as a five-per-cent. carbolic acid solution, being used.

What will cure a sore on a horse's foot just above the hoof caused by calking, if excessive granulation has set in?

Injuries of this kind are difficult to cure if pus has formed and the wound has become unhealthy because of so-called "proud flesh." Cutting away the horn of the hoof to allow drainage will probably be necessary.

How can thrush be cured?

Try dusting calomel into the cleft of the frog, or mixing calomel with lard or vasoline and applying. Keep the foot dry and out of the mud or moisture.

What causes diseased coffin joints?

Diseased coffin joints are caused by contraction of the foot, bruising on hard pavements, improper shoeing, and allowing the animal to go too long without shoeing.

Under normal conditions is any medicine for the kidneys advisable?

No. If the animal is in a healthy condition there is no necessity for using drugs.

Is a splint on a horse's leg more objectionable or injurious in one place than another? That is, do splints always lame a horse?

The location of the splint determines to a large extent whether or not lameness results; they do not always produce lameness. The small splint may not interfere with the action of the limb in any way, and unless the growth is large, there is often no friction or pain when the animal is moving and consequently no limping.

Is sweeney in horses curable?

Sweeney is usually due to lack of exercise of a certain muscle, or group of muscles. A careful massage, or the application of liniments accompanied by friction will often restore the shrunken tissue. Turning the animal to pasture is often beneficial.

What is the cause of ringbone, and how can it be cured?

This trouble is caused by bruises, sprains or injuries, or may be hereditary. It is incurable so far as the removal of the growth is concerned, but lameness may be checked or entirely prevented in many cases by blistering. Firing the

ringbone is often resorted to, but the results are not always satisfactory. It is advisable to consult competent authority before using blisters.

What would you advise in the case of cracked heels or grease heels in horses?

Bathe the parts freely using a good disinfectant. Then apply any reliable veterinary healing salve.

What is the best remedy for horses whose legs stock when they stand in the stable?

Regular exercise combined with the use of laxative foods, and occasional ounce doses of saltpeter.

What is the best remedy for mud scratches?

The use of ointment prepared by mixing together lard, iodoform and pulverized copper sulphate is often beneficial. The use of any disinfectant or disinfecting ointment is recommended.

What should be given a horse for colic in case a veterinarian cannot be secured?

A pint to a pint and a half of raw linseed oil given as a drench is advisable. Narcotics such as laudanum or morphine may check pain, but are not advisable except in very severe cases.

Is cribbing hereditary? What causes horses to crib, and what will stop it?

Cribbing is considered by most authorities to be transmitted to offspring and is therefore hereditary in some cases. However, it is usually a habit acquired by animals when standing for long periods in a stable without work. It may be due to sore mouth, overlapping front teeth, or an eruption of new teeth which cause irritation.

A cribber is difficult to cure. The removal of posts, beams or surfaces which the animal can grasp with its teeth will be of assistance. A so-called cribbing strap, which is drawn tightly around the neck back of the jaws, checks the habit to a considerable extent. No positive cure is known.

What causes scouring in horses?

This is usually due to some improper feed whereby the intestinal canal is irritated or rendered abnormal. It is practically a chronic catarrh of the intestines and requires more or less careful diet. Watering the animal immediately

before work is sometimes the cause. In cases where it has become fixed, treatment is very unsatisfactory. Cathartics will sometimes remove the irritating contents of the intestines, and the use of antiseptics internally, such as creoline one ounce daily, is sometimes effective.

Is blackwater in horses due to wrong method in feeding? How can it be avoided?

Blackwater or azoturia may be caused by improper feeding. Animals should be fed according to the work they have to do. Regular exercise combined with laxative foods will usually prevent this trouble.

What treatment is advisable for a horse that has pneumonia?

The services of a competent veterinarian should be procured. Meanwhile, keep the animal quiet and away from draughts with plenty of fresh air. Keep water before it constantly, and apply a mustard paste or hot compresses to the chest. Give stimulating foods if the animal will eat. Use alcoholic drenches if it refuses to eat.

What is a good cure for a horse having worms?

Two ounces of oil of turpentine in one pint of raw linseed oil is often of value for intestinal worms in a horse. The kind of treatment that should be given depends upon the type and location of the parasite, and a knowledge of the disease is essential to proper treatment.

Will potatoes and ashes given a horse for worms injure the lining of the stomach?

This remedy has some value, and if given in small quantities will not injure the stomach.

What will cure a horse of mange?

Mange is due to several different kinds of parasites or minute mites. Sulphur ointment carefully applied is often sufficient to destroy them, but it is advisable to call a veterinarian when this trouble is suspected, because of the danger of spreading. The application of soap and thorough scrubbing with a five-per-cent. carbolic acid solution will be of advantage, and tobacco solution (1½ ounces to 2 pints of water) is often effective. More than one application of any treatment is necessary, be-

cause the eggs of the parasite are not destroyed by the solution, and consequently hatch after its application.

What is good to remove warts on a horse?

If the wart has a small stem, it may be clipped off with scissors. Tying with a strong silk thread will often cause them to slough off. The application of caustics will sometimes remove them.

Are horses subject to tuberculosis?

No. Occasional instances of horses being affected with this disease have been reported, but they are not common.

Does it pay to raise colts?

During the past few years considerable profit has been realized from raising colts. During the past decade the average price of mature horses has risen 76 per cent. in New York State. Notwithstanding this advance in price, our farmers do not produce the horses used within the state, and the horse merchants in the larger cities are obliged to go west for their supply. In fact, many of our farmers do not raise the horses used on their own farms, and are thus obliged to go to the cities to get them. Since the demand is greater than the supply, we have the very best horse markets in the world.

Which is the more satisfactory colt to raise for sale—the draft or the general purpose?

While the cost of producing a horse will depend entirely on conditions, yet during the past three years (1910-12) with food at the market price, it costs approximately \$145 to raise a light horse up to three years of age, \$160 to raise a medium-weight horse, and \$175 to raise a draft horse up to the same age. This cost includes a liberal grain ration, practically all the hay the animals would eat, the service fee and the like; but no doubt it could be reduced on the average farm, where there is often much food with little market value. The average selling price for the three years was approximately \$140 for the light horse, \$200 for the medium, and \$300 for the heavy horse. Thus the farmer engaged in raising the light horses and selling them on the market is losing money by the transaction; while the farmer breeding horses of medium weight is making \$40 on

each animal and, most interesting of all, the farmer breeding heavy horses is realizing a profit of \$125 on each animal sold. According to this computation the greater profit is obtained in the production of the large horse.

What would be a good balanced ration for a growing colt? Give method of feeding.

It is essential that the new-born foal get the first milk from the dam. This first milk, often called colostrum, is a natural purgative, and contains principles adapted for the removal of material — often called menconium — which has accumulated in the digestive tract of the foal during the last few days of foetal development. The prompt removal of this material is essential to the life of the foal, and for this reason it is highly necessary that it be supplied with the first milk from its dam.

As soon as the colt is old enough, he should be encouraged to nibble at grain, preferably oatmeal and bran. As a rule, he will begin to munch in the dam's grain box at two or three weeks of age, at which time he should be encouraged to eat by mixing a little sugar with the meal and bran and feeding it. If it is desired to push the colt to his maximum development, a little sweet skim milk may be fed after he is six weeks to two months of age. At this time, a small quantity of oil meal can be fed with profit as it contains a large proportion of muscle and bone forming food. The effect of such a ration — the dam's milk, sweet skim milk, oatmeal, bran and oil meal — on the growth and development of a foal is remarkable.

In choosing a ration for the growing colt it is important that much protein be supplied, as this constituent is essential in the formation of bone, muscle, blood, nerve, hair and hoof. The food should be palatable and easily digested. Such foods as oats, bran, peas, linseed and perhaps a little corn-meal may constitute the grain; while alfalfa, clover, or mixed hays, which should always be fed sweet, may constitute the roughage.

The following rations have given very satisfactory results in growing colts:

I.

Ground oats	5 parts
Bran	2 parts
Corn-meal	2 parts
Oil meal	1 part

II.

Ground oats	4 parts
Bran	3 parts
Corn-meal	3 parts

III.

Corn-meal	5 parts
Bran	3 parts
Ground oats	2 parts

Grain rations I. and II. are considered better for weanling colts than ration III., although the latter may prove equally as efficient for older colts. If ration I. should prove too laxative, reduce the oil meal and perhaps the bran. On the other hand, should the colt seem constipated, a bran mash will prove beneficial.

The exact amount of the mixture that should be fed will depend largely on the individual. On the average, however, excellent results will be obtained by feeding the weanling four pounds of grain daily and all the sweet clover, alfalfa, or mixed hay he will consume, which will be from 6 to 10 pounds each day; by feeding the yearling six pounds of grain daily and all the hay he will take, which will vary from 12 to 15 pounds, and by feeding the two-year-old, eight pounds of grain daily and all the hay he will consume, which will vary from 15 to 20 pounds.

Many excellent horsemen advise feeding the growing colt whole oats once a day, preferably in the morning, and the mixed grain at noon and night. For best results, the colt should be fed the grain ration three times daily, though many feed but twice. Twice daily is frequent enough to feed the hay, morning and night.

Growing colts should have rather warm quarters as they cannot endure the inclement weather as can mature horses, but they should not be confined too closely to the stable. The colt needs abundant opportunity for exercise in the fresh, pure air, uncontaminated by stable odors, as this is essential to a healthy development. It is not sufficient that he be led out at intervals for exercise; he needs an opportunity to romp and play, that he may extend his muscles to their utmost capacity, expand his lungs to their very depths and send the blood coursing through his veins with much vigor, to promote a healthy, robust

development of heart and lungs, bone and muscle, and nowhere can it be obtained in so great perfection as in the freedom of the open paddock or field.

How can colts be kept free from worms?

If colts are properly cared for, they will seldom be troubled with worms. As a rule, those affected will recover if given a good variety and an abundance of nutritious, laxative food, with some tonic. The following mixture is excellent:

Sulphate of iron, pulverized.....	4 ounces
Nitrate of potash, pulverized.....	2 ounces
Ginger root, pulverized.....	2 ounces
Gentian root, pulverized.....	2 ounces
Nux vomica seed, pulverized.....	2 ounces

Mix together thoroughly and give a half teaspoonful in the feed twice daily. A mixture of two parts by measure of common salt, two of wood ashes and one of sulphur, placed where the animals can have access to it, is also excellent. Bad cases require medical treatment.

At what age is it best to commence to break a colt?

The earlier in life the training begins, the easier the task; and the longer it is postponed, the greater are the chances of a hard struggle. An important advantage gained by early training is that the colt becomes acquainted with his master at a time when man is his physical superior. We can show rather than force the colt to do that which he does not understand, and thus fix the idea in the animal's mind that he is our mental and physical inferior and must obey. It is, therefore, of advantage to teach the colt to lead, to back and to obey simple commands before he is one month of age.

There are many opinions as to the proper age at which a colt should be trained for work. Some horsemen believe that the horse should not be worked until coming four years old, while others think a more useful animal will result if put to light work at two and one-half or three years of age. It would seem that these ages might well represent the extremes. As a rule, the horse should not be put to work under two and one-half years of age, and even then the work should be light and the working hours short. If the work is too severe or continued

for too long a time, the animal will be retarded in his growth and will not make as useful a horse as if the training had been delayed a few months. On the other hand, if the horse is thrifty, it is poor economy to keep him in idleness after he is four years of age.

Is it advisable to breed a two-year-old mare colt?

The advisability of breeding a two-year-old filly depends on conditions. A well-matured filly can be bred with little or no risk, although it would be poor policy to breed an immature one. There is considerable difference in the way mares mature. Draft-bred mares generally mature earlier than the lighter and more active breeds; and smoothly turned, neat and well-finished fillies make their growth earlier than rough and more vigorous individuals.



SHEEP

"Let us hope that in our land young men may be found who while working with the gentle ewes and innocent lambs may from these scenes of peace absorb sufficient love of home, country and native land that they may come forth strong to help in the redemption and up-building of their own country."

JOSEPH E. WING

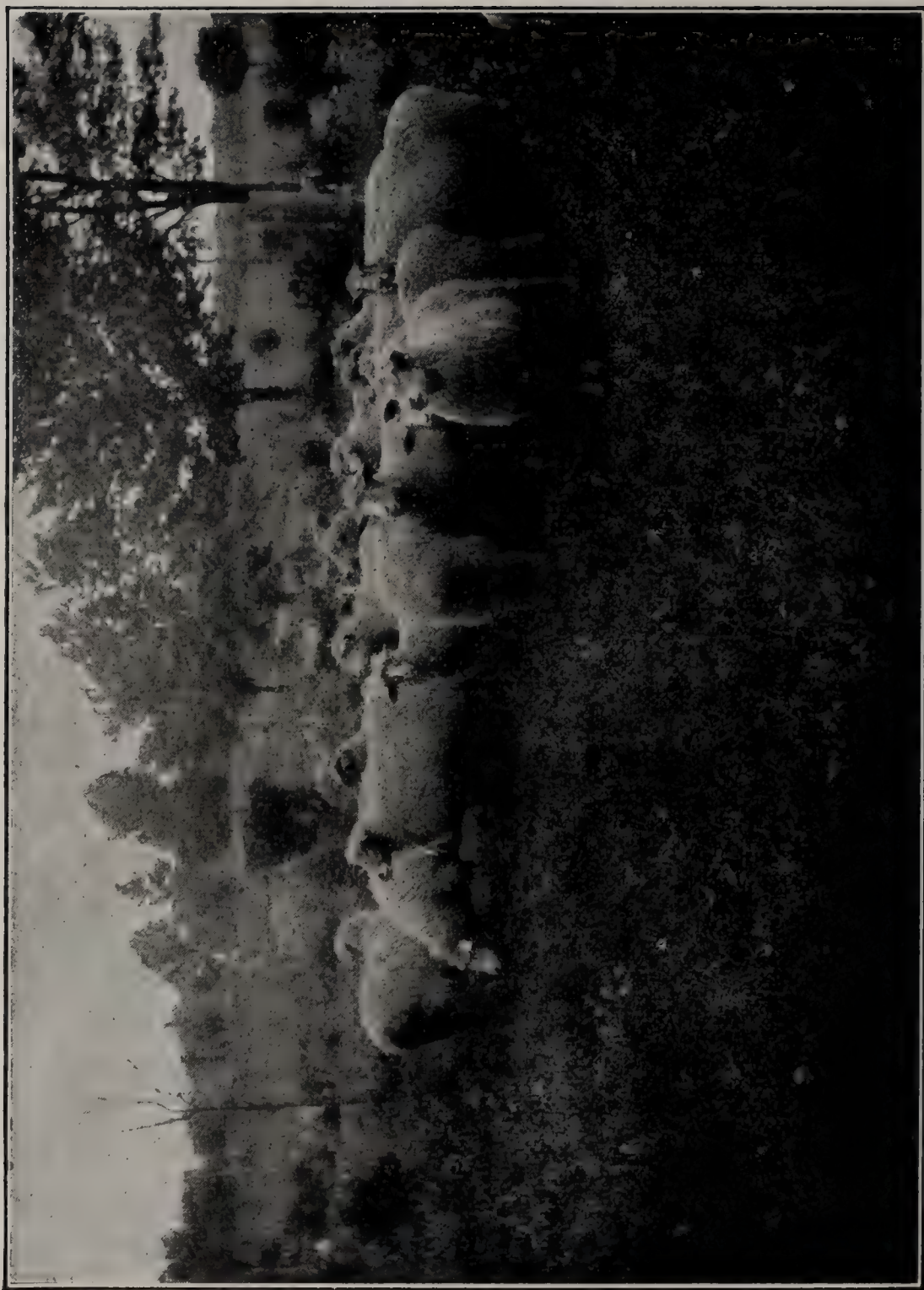
Are sheep an advantage to a farm, or do they injure it by tramping?

For centuries the sheep has been known as the animal with "the golden hoof," and this would imply that they are of decided advantage. The injury by tramping is materially less than with larger stock. They are scavengers and destroy many noxious weeds. They require very much less labor than cattle, and in the hands of a man who is fond of them, are exceedingly profitable.

Are sheep as profitable as cows, and what is the best breed to keep? Will they eat or destroy devil's paint brush? Will a 24-inch woven wire fence keep sheep in?

It is hard to make the comparison between the two since so many factors enter in. (1) Character of the farm: One on which cows could be profitably kept might not be suitable for sheep, and the reverse. (2) The amount of labor available: Sheep require comparatively little; cows very much. (3) Nearness to market: The product of cows must be carried away daily, that of the sheep only twice a year, and one of those times they will go on foot. Given favorable conditions with labor considered, sheep will usually pay more net than cows.

The breed depends wholly on what one proposes to do with the product and on the character of the farm. For hilly pastures where sheep must shift for themselves most of the time, the larger breeds of fine wool will be most profitable. With plenty of good pasture, care in protecting from the weather and in combating parasitical troubles, and if making mutton lambs is the chief thing, some of the English mutton breeds would be best. If the purpose is to grow winter lambs for the early market, the Dorset, Tunis or the large Merino bred to a ram from one of the downs would be better.



“The maintenance of good sods without sheep is a problem without solution in some regions.”

Sheep are natural scavengers and will eat very many weeds. They are not fond of devil's paint brush, but will eat some of it, and if starved to it will eat more. This, however, is not a profitable way to keep sheep.

A 25-inch fence is pretty low for any animal. A 36-inch, or better yet, a 42-inch woven wire fence will keep sheep in, and if close to the ground will keep dogs out.

Which is the better breed for hot-house lambs, the Tunis or Horned Dorset?

Dorsets will give birth to their lambs slightly earlier than the Tunis, but no lamb will grow so fast and be as fat for the first three months as the latter. After that they do not develop as rapidly. Both breeds are excellent.

Which would be the more profitable on a 200-acre farm, dairying or feeding lambs in winter?

This will depend on the character of the crops grown on the farm, its distance from a dairy market and the amount of labor available. The dairy will bring in a monthly income and furnish a large amount of fertilizing material, but it will demand daily attention. The lambs require comparatively little labor, and that in the winter when work is not pressing. They will turn into cash corn and other grains grown on the farm, as well as hay. If purchased wisely there should be not only a gain in weight, but a material gain in selling over purchase price. There is no stock that requires such careful handling as winter lambs fattening for market, but when so handled they yield a nice margin of profit.

Is it best to breed pure-bred sheep, and why?

It is always best to keep pure-bred stock because the improvements in all animals have been obtained through line or pure breeding. Each of the several leading breeds have peculiar merits which have been established in this way. Pure-breds will produce more mutton and wool from a given amount of feed than those bred indiscriminately, and their progeny will be worth very much more for breeding. The man of moderate means can scarce afford to invest in a flock of pure-bred ewes, but he cannot afford to have anything else than a pure-bred male, and from this progeny he can very soon develop a flock

of sheep that for symmetry and productiveness will be nearly equal to pure-breds.

What is the best way to care for sheep in winter?

It depends somewhat on the kind of sheep. For instance, breeding ewes would require different care and food from those fattening for mutton. Again, ewes that are to give birth to lambs in early winter should be treated differently from those not lambing until late spring. In all cases keep sheep in dry, roomy quarters well ventilated, not necessarily warm. They should have access to plenty of fresh water at all times, with early-cut hay or other well-cured forage, and more or less grain according to their particular needs. It is very important that they have some succulent food. Roots are best and silage a very close second. Prior to giving birth to their lambs, they should have no corn, but should be fed protein feeds similar to those given to a dry cow. After lambs are born, corn may be added to the ration; we have found that the same feeds we give our milk cows are profitable to feed to our milking ewes.

Does it pay to feed sheep grain all winter, or only for a month before lambing?

This will depend very largely upon the character of the coarse feed. If alfalfa is available it will not be necessary to feed any grain before lambing. If clover or oat and pea hay is fed, very little grain will be required. If the hay is mixed with corn fodder, they will need more grain. How much and how long they should have it before lambing will depend on the condition of the sheep, those in good flesh needing much less than those that are thin. If the lamb is to be dropped in early winter, it is desirable that a little extra grain be fed and for a little longer period, in order to build up the lamb and enable the ewe to give a large amount of milk. If the lambs are not to be born until in the spring, for sheep in good condition, graining a month before lambing is long enough.

Is cottonseed meal as good as oil meal for ewes with lambs?

A moderate amount of cottonseed meal in the ration for ewes with lambs is very good, but the oil meal, although slightly more expensive, is to be preferred. The former is

constipating, the latter laxative. If one can obtain it, the nutted or coarse meal is better than the fine, since the fine is somewhat sticky and will annoy the sheep by getting into the nostrils. There is always danger of young lambs eating too much cotton-seed meal with their mother.



Highland

In what proportion should oats, cracked corn, bran and oil meal be mixed for sheep?

If this ration is for breeding ewes, a mixture by weight of one part corn, two parts oats and one-half part oil meal will make a very good ration, leaving out the bran, which is expensive and where the oats are home grown, unnecessary. Or one part bran and one part oats may be fed if it seems desirable to use both. It never pays to grind corn for mature sheep unless they are very old with broken mouths, and it would be better to dispose of such before they reach this stage. Young fattening lambs should be fed half the mixture of cracked corn with the other feeds, in proportion as above.

For fattening lambs what is the best grain with clover hay, the grain to be largely or wholly farm grown?

If the grain is home grown, half of it may be whole corn, and with this nothing is better than oats and peas sown together in equal parts. If roots or silage are available, this will be almost an ideal ration; failing in the latter, some oil meal should be added. Frequently the oats can be sold for two cents a pound and the money invested in cottonseed or oil meal, giving very much more and better food for the money. We have fed to fattening lambs, in connection with corn and wheat bran and an abundance of roots, as high as one-fourth pound per day of cottonseed meal with great profit.



Merino

Are roots essential to successful sheep growing?

Yes, or succulence in some form. The English breeds of sheep — than which there are none better — have been developed largely by liberal feeding of roots. In fattening sheep for market we have found that we could get more pounds of gain on less grain by using plenty of roots, than where they were lacking.

Is silage a good feed for sheep?

Silage is an excellent substitute for roots. It should not be fed quite as liberally as to cows; from one to two bushels to fifty sheep being a safe amount. If the sheep are very large, this quantity may be increased somewhat.

How much ensilage can be fed to 20 ewes with profit, and what grain would be best to feed with it, having clover hay for fodder?

A bushel a day will not be too much on the start, and later this may be increased one-half with profit. The breeding ewes, prior to giving birth to their lambs, should be fed practically the same ration that would be given to a dry cow; after the lambs are born, such as would be fed to a cow giving milk. Because of the price at which the food in them can be obtained and because sheep are very fond of them, we feed largely of dried brewers' grains, adding whole corn after the birth of the lambs.

Can silage be fed to lambs and beef cattle at a profit? Is it advisable to feed it to fattening lambs more often than once a day?

Fattening lambs will eat ensilage to advantage. They are not as fond of it as of turnips, but it supplies a needed succulence and is a very close second to the latter. For beef production it is as valuable as for the production of milk.

In one feeding they can get all of this sort of food needed to keep them in good condition; the balance of the roughage would better be clover or other early-cut hay.

What is the cause of sheep pulling their wool, and how may it be prevented?

The most common cause of wool pulling is owing to parasites — either ticks or the scab. The irritation of the skin annoys the sheep, and in the effort to get at the source of the trouble they pull the wool. Very often a habit is then formed which it is somewhat difficult to cure. Remove the cause (see following question) and the trouble will usually disappear. Sometimes, they crave protein food, and endeavor to get it from the wool.

What is a good sheep dip for ticks, and how should it be applied during cold weather?

Very good results may be obtained by the use of one of the carbolic sheep dips which can be purchased through any drug-



Cheviot Ram and Ewe

gist at about \$1.50 per gallon, and may be diluted from 75 to 100 times with water. This will not only destroy the ticks but the nits as well, and acts as a stimulant to the skin. When the weather is too cold to dip the sheep bodily, put the liquid in an old teakettle or watering pot, and place sheep on their backs, opening the wool along the stomach and between the front and hind legs; then slowly pour on the dip until the skin of the animal becomes saturated, seeing to it that the parts of the neck and shoulders are well covered. In this way the skin is reached without saturating the entire fleece. Were the liquid applied from the back downward, it would follow the fiber of the wool and very little of it reach the skin without saturating the fleece.

Does tuberculosis affect sheep as well as other farm animals?

Very seldom; cattle and hogs are much more commonly affected.

What are the principal diseases of sheep, and how can they best be prevented?

The most fatal disease of sheep is intestinal worms, for which tobacco is the best-known remedy. It may be used in any form, preferably the stems or the dust, but even the cheaper grades of smoking tobacco will serve the purpose. Place it with their salt in boxes where they have access to it at all times. From two to four quarts per week is a sufficient amount for forty ewes. The worms are in the intestines of the mature sheep. They pass out in spring with the voidings and contaminate the grass of the pasture, which, eaten by the lambs, affects them. They being weaker are injured and often die from this cause.

Grub in the head is another trouble, but not a serious one. The fly lays these grubs on the sheep's nostrils in August. They crawl into the nasal cavity and hatch and annoy the sheep in the spring. Many times sheep are said to have died from a grub in the head, but the more prevalent cause is lack of "grub" in the stomach, those that are well fed rarely suffering from this trouble. Smearing their noses in late summer with tar, or placing salt in boxes protected by a pole smeared with it, will do much to prevent entrance of the grub.

Foot rot is another trouble. This usually occurs where the sheep are running in damp places, and when once contracted is communicated to others free from the disease. The remedy is to keep sheep on high, dry land, and if a case occurs, pare off the affected part of the hoof, and stand the sheep in a solution of blue vitriol water made by dissolving three pounds of the vitriol in a gallon of water. If this is done at the outbreak of the disease it will usually be effective. After the disease has penetrated to the inner part of the hoof, it is a much more serious matter and will take a long time to remove.

Sheep are also affected by a disease known as "scab," an eruption of the body. This is the work of a minute parasite which bores under the surface of the skin. Thoroughly rubbing the affected parts with one of the carbolic sheep dips is an effective remedy. If the sheep suffering from this trouble have been kept in pens, it is necessary to disinfect the parts of the pen with which they come in contact.

When is the best time to shear sheep?

The old practice was to wait until the water was warm in June, dip the sheep in some muddy pond or running brook, then as soon as they were dry, shear them. This dipping is now obsolete, and if the sheep are allowed to retain their fleece after they go into the pasture, much wool is lost because it is soiled by the laxative character of their voidings, and they suffer severely from warmth. Then suddenly the wool is removed and they are exposed to the weather, often cold winds and rain, and they suffer from the exposure and frequently contract pneumonia.

The better time is after the weather has become somewhat mild in late March or early April, when the sheep can be closely and somewhat compactly housed and thus protected from extremes. At this time the wool is clean and the sheep really suffer very much less than by the former method. Many practice shearing in the late fall, housing closely for a time. This has its advantage since it is more easy to destroy ticks or other parasites, and early lambs can more easily obtain the milk. The fiber sheared at this time is shorter if they have been

sheared the preceding spring. They will suffer somewhat more from the heat of early summer with considerable fleece on their backs.

Is there any profit in wool?

At present prices there is very little profit in wool alone, nor is there likely to be, for we come in competition with wool from Australia, raised by the cheapest kind of labor on the lowest priced land. The profit from sheep must come from the carcasses; whatever is obtained from the wool is a surplus.

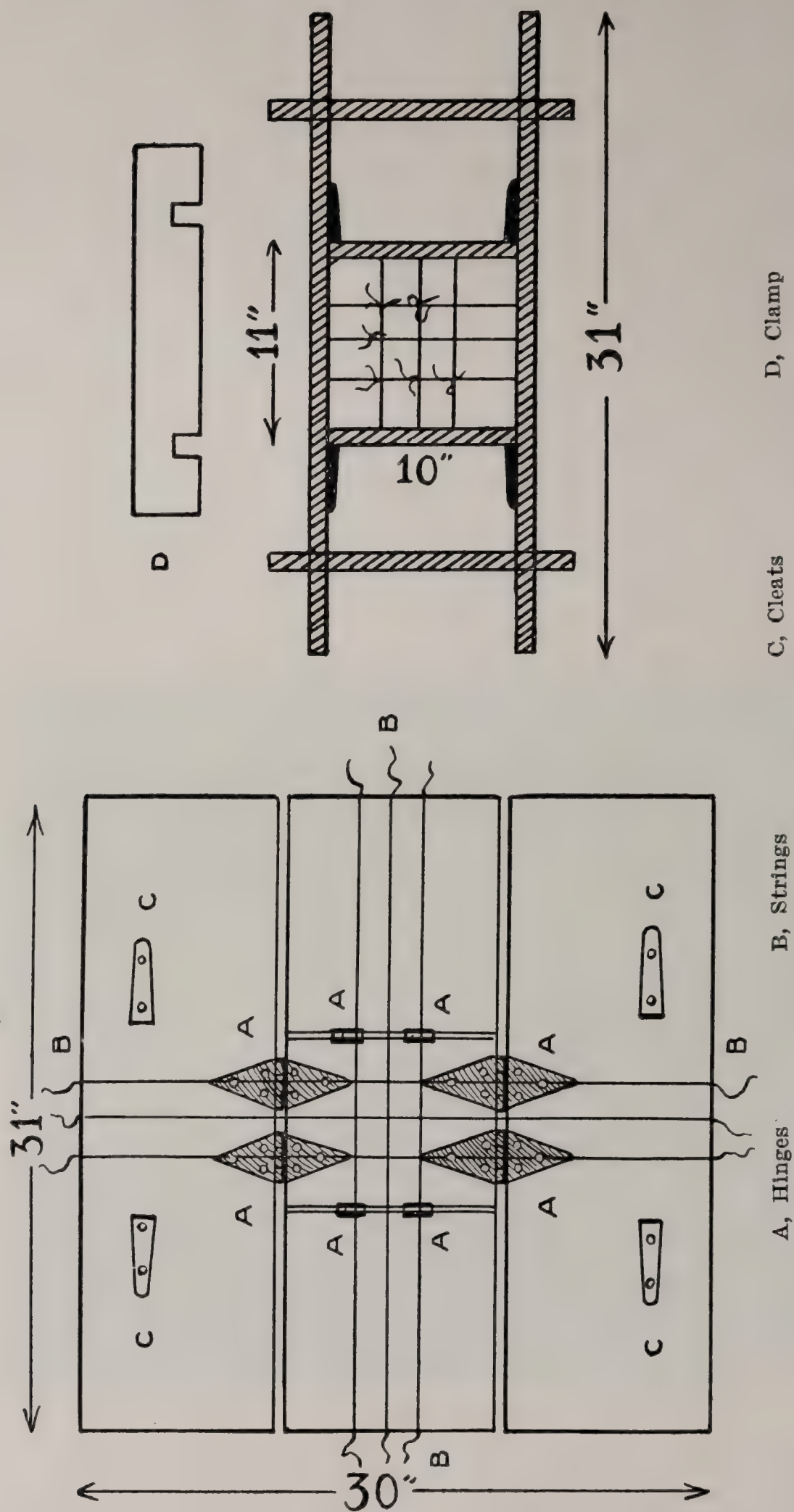
What is the best way to handle wool?

When shearing, the fleece should be kept as compact as possible, and as soon as removed from the sheep spread on a table large enough to contain the whole fleece, with the side next to the sheep toward the table, and all soiled portions removed. Crowd the fiber toward the center, making it as compact as



Suffolk

possible, then fold in the outsides and roll it into a square bundle. This brings the white side of the fleece in sight. To make it more attractive and compact a wool box is desirable,



wherein the fleece can be placed, twine having been put in the box previously, the ends brought together and clamped with the side. (See illustration.) It should then be set away from all dust and in a place free from moths and not too damp. Only the coarse wool twine should be used; binder twine or other twine with a strong fiber being very objectionable because it is difficult to separate it from the wool, and this often reduces the price one cent per pound. Great care should be taken to keep the sheep where no burrs will get into the wool while in pasture, and avoid careless handling of the hay in the pen. The leaves of clover and other hay are even more objectionable to the buyer than the twine.

Can wool be readily disposed of in small quantities?

Yes. Any wool dealer large or small will readily buy a few fleeces. Usually there is no difference of price between a large and a small quantity.



SWINE

"If the farmers of the eastern states would give their swine the same intelligent care and attention they give their horses, their cows and their sheep, first in their selection, second in their breeding, and third in their feeding, the lowly and despised pig would do the rest, and would soon occupy the proper place on our farms."

CALVIN J. HUSON

In which is there the greater profit, raising calves or pigs?

If a farmer has plenty of skim milk and the pigs can have some forage plants, they will probably pay a better return for the milk than any stock on the farm, except poultry. Nevertheless, if he wishes to maintain his dairy at its best, it will be necessary for him to raise his own calves. Both have a place on a well-regulated farm.



A Berkshire Family

What breed of hogs make the quickest growth?

This depends more on type than on breed. The Berkshire will be ready for market at as early an age and on as little feed as any.

What is your opinion of the mule-footed hog?

Those who breed them have claimed they were less susceptible to disease than many of the other breeds, but this has not been borne out by facts, nor by experiments conducted at the different state farms. They are not as large as many of the others, and have a tendency to cripple and become lame if heavily fed. The Berkshire, Chester White, Duroc Jersey and Poland China are always in demand and will probably prove as satisfactory as any of the more widely-advertised but less-known breeds.

What is the cause of young pigs having humpback or curvature of the spine?

This usually appears in pigs bred from aged parents or parents of low vitality or weak constitution. It is usually a matter of inheritance rather than of condition.

What is a good remedy for hog lice?

Crude petroleum will be found very effective. It costs about ten cents a gallon and is much more satisfactory than the usual dip.

What is the best and most economical way to raise winter pigs without milk?
Would it be profitable?

Feed a thick mash of the consistency of cream, one-half corn-meal, the other half may be wheat middlings; or equal parts of finely ground oats and barley, or oats or barley and middlings. Mix with hot water and feed warm three times a day until the pigs are four months old. After that twice daily, at about eight in the morning and five at night. Feed just what they will clean up greedily and no more. Give a drink of water occasionally. When the pigs are four months old, the slop may be thin and water may not be necessary in addition to that in the slop. Give a bit of alfalfa hay, or better still, ground alfalfa may take the place of the middlings or oats after the pigs are five months old. Scatter soaked corn and whole oats on the floor to induce exercise, and keep at all times in the pen a pile of hard-wood ashes on which a handful of salt has been scattered. An acre or two of winter-rye pasture will be found very desirable and profitable in this connection.

Yes, it will pay if the pigs receive intelligent care. Dry bedding and lots of it should be provided at all times and changed at least once a week.

Please give a balanced ration and state briefly the difference in feeding values of skim milk and buttermilk for hogs. Should the ration vary according to age?

To answer fully requires more length than is possible here. Corn-meal and middlings each one-half with skim milk; or corn-meal, ground oats and wheat middlings each one-third with skim milk. If you have no milk add ten per cent. of Digester tankage or oil meal, preferably the tankage, and mix with water to the consistency of cream. Of course, mature animals require less of the protein, and oats and corn or middlings and corn will be found sufficient. This feed is greatly helped by the addition of pasture both winter and summer. A wide range of pasture may be used in summer, and rye pasture during the winter.

There is little difference in the actual feeding value of skim milk and buttermilk. Buttermilk should be used sparingly for pigs under five months of age as it may cause scours; if very sour it will be bettered by the addition of common soda or slaked lime occasionally to neutralize the acid.

What is a good winter ration for a brood sow weighing 300 pounds?

Equal parts by weight of wheat bran and corn-meal. If alfalfa is available, feed alfalfa hay in the morning and a few ears of corn at night, which makes a splendid ration. Unless the sow is out on winter pasture and so gets plenty of exercise, feed whole oats or shelled corn scattered on the floor to induce exercise. The best possible place for a brood sow in the winter time is in rye pasture.

Is there anything gained by cooking feed for hogs?

Beans and potatoes should be cooked for swine, but all grains are rendered less digestible by cooking. In winter time it is advisable to feed the slop warm but not cooked.

Do corn-meal and beans make a well-balanced hog feed?

Yes. The beans should be cooked; the corn-meal will not be improved by cooking.

What are the relative values of separator milk and buttermilk for feeding?

Skim milk one-half; buttermilk one-seventeenth.

Which will fatten cows and hogs the sooner, corn-meal fed dry or wet?

Better feed dry in both cases, particularly to cows. In neither case is it economical to feed it alone. One-half bran will produce more meat in less time and at smaller expense.

What is the value of skim milk as a feed?

Skim milk contains 3.1 per cent. of digestible protein and a little less than 5 per cent. of carbohydrates. If properly skimmed there should be no fat. Its value is largely relative, depending on the price of grain foods, for which it is a partial substitute, and on the character of the animals to which it is fed. For instance, it is worth more for a very young pig or calf than one that is nearly mature. With present prices of grain feeds the value of skim milk is not much below 25 cents a hundred.

Which is the more profitable to feed, sour or sweet skim milk as it comes from the separator?

For calves, by all means feed it sweet, and this is also true for young pigs. For older pigs it seems to digest somewhat more easily if it is slightly acid, although there is some loss of sugar.

Which is the better for young pigs, fresh separator milk or from the old-fashioned swill barrel?

Fresh separator milk is better. This milk fed when just turned is as good, if not better, but is likely to become putrid and cause scours if fed from a receptacle not clean.

At present prices of feed what is 100 pounds of buttermilk worth?

One hundred pounds of buttermilk will commonly contain seven or eight pounds of total solids of high value, and when protein feeds are worth \$30 per ton, buttermilk should have an actual feeding value ranging from fifteen to twenty cents per hundred pounds.

Should whey be sterilized if there is fear of tuberculosis? What effect can tuberculosis have upon the products such as cheese, butter, cream, and does the cream separator change the condition?

The sterilization of whey is advisable if there is reason to suspect tuberculosis in a herd. The heating to which milk is subjected in making cheese would probably destroy some of

the tubercle germs. It has been found that tuberculosis may be transmitted through cheese, butter or other dairy products. The separation of cream from milk by the centrifugal cream separator does not remove all these germs.

Which is better for growing pigs, milk set and skimmed, or that separated with a separator?

Milk set and skimmed because there is more fat left in it.

What is the best feed for young pigs when there is no milk?

Corn-meal and wheat middlings in equal parts, adding 10 per cent. tankage. Feed in form of thick slop, warmed in winter time.

Which is the cheaper feed for growing pigs, wheat at 85 cents per bushel or wheat bran at \$1.60 per 100 pounds?

The whole wheat, decidedly. This would be only \$1.42 a hundred, making a reduction of 18 cents in the first cost. And the wheat also contains more fattening material, which is needed by the growing pig.

Which is the more profitable and economical to feed young swine, ground wheat at 90 cents a bushel or middlings at one and one-half cents a pound?

There is little difference; corn should be added to either ration.

Should corn be fed to very young pigs?

Yes, in combination with skim milk or other feed of a nitrogenous character. Soaked corn is excellent to start pigs when first learning to eat.

Is it better to give a hog drink separate from his meal?

Yes, but it is not necessary except in starting young pigs or during hot summer weather.

Should pigs have all the drink they want or just a little in fattening?

All they want. In fact they will not drink as much as they require in cold weather and should be induced to consume liquid by making their slop reasonably thin.



“Hog raising to be profitable is largely a pasture proposition.”

What grain makes the best summer and fall pasture for hogs, and when should it be sown?

Sow rye about August 20, two bushels to the acre, and pasture during the late fall and winter, permitting the pigs to harvest the grain after it has matured; or, sow rape, three or four pounds to the acre, any time between April 1 and July 1. Alfalfa and clovers, of course, also make excellent summer pastures.

What kind of grass makes the best pasture for hogs?

Alfalfa probably comes first, next red clover.

Is cut alfalfa valuable as part ration for hogs?

Yes. It is also good ground and mixed with the slop.

What proportion of bran should be fed with meal to fatten pigs six months old, no milk but whey?

Whey and corn make an excellent ration, but the addition of bran is not advisable. The best use for bran is to feed brood sows during the winter months.

What is the value of sugar beets for swine, and how much land should be planted for hogs?

Beets contain too much bulk in proportion to the amount of nutrients and are most valuable as a part ration for brood sows during the winter months. They extend the digestive tract, furnish variety and are good to keep mature animals in thrift. Care must be exercised not to feed many sugar beets to boars. The land to be devoted to beets would depend upon its productiveness and the care and cultivation the beets received. They are heavy yielders.

How much food do beets contain for either hogs or cattle?

Basing the answer only upon the amount of nutriment contained in the beets, they are worth from four to five dollars per ton. This would hardly express their actual value however, since they furnish a change in ration, have a tendency to promote thrift, and are very desirable to form a part of the ration during the winter months.

What is the value of ensilage for hogs?

Ensilage may properly form a good part of the winter ration for mature hogs or shoats over six months old. It is much

used and liked mostly for the fact that it provides some variety. It is laxative in its character and has a tendency to distend the digestive tract. It should not be fed to sows nursing young.

Will hard soap used in dish water hurt or kill hogs?

No. On the contrary it has benefit as a vermifuge. Avoid washing powders, however.

What is a good hog tonic?

One ounce dried sulphate of iron, three ounces gentian root, one and one-half ounces nux vomica, two ounces nitrate of potash, all pulverized and mixed. Give one level teaspoonful three times a day for every hundred-weight.

What is the cause of pigs getting crippled?

This condition in pigs is often of a rheumatic nature, and may be developed by the animal lying upon damp floors or the cold ground. Wood or cement floors are also often the cause of the animal becoming apparently crippled. Allowing the pigs to run on the ground and placing them in dry, warm surroundings will generally prevent further trouble.

Why do pigs become lame in their hind legs?

This may be caused by rheumatism, overfeeding, lack of sufficient lime in the ration. The condition is improved by feeding some molasses, by putting them on grass pastures and keeping them off cement floors.

What is the cause of the disease in pigs known as "black teeth"? Is it infectious and what is the cure?

Most pigs have black teeth. They are normal and harmless. The teeth that cause trouble in little pigs are the little sharp tushes. Should these tushes cause annoyance to the sow in nursing or should they scratch one another too much in fighting, they may be removed with pincers.

What is a cure for pig distemper?

Isolate the individual. Feed moderately, adding a tablespoon of molasses once each day, keep in the sun as much as possible; also use a little pine tar in the bottom of the pail from which the pig is fed so some of it will be eaten with the food.

What is the best roofing for a hog pen and what is the proper way to ventilate the pen?

Any serviceable roofing that is warm and affords protection. Ventilation may be by air shaft or windows. There should be many of the latter on the south side of the hog house. Better still, use individual pens housing from six to ten animals. Large breeders are using these almost entirely and with excellent results.



Registered Duroc Jerseys

POULTRY

POULTRY

What amount of land is required to keep 100 hens?

The rule is to allow about one acre of land for this number; that is to say, a ten-acre farm should contain sufficient land for keeping 1,000 hens, the assumption being that about half of this would be used for rearing the young stock. This would allow 200 hens per acre on one-half of the farm.

What number of eggs would you consider a fair yield from 50 pullets during December, January and February?

Ordinarily one should expect to secure from 50 early-hatched pullets the following yields: 10 to 15 eggs for December; 15 to 20 eggs for January; 20 to 25 eggs for February. Much, however, will depend on variety and the date on which the pullets were hatched. Generally, Leghorns will lay well when they are from six to seven months old, and a few will lay when four and one-half to five months of age. If, therefore, pullets of any variety are hatched about three weeks apart during the hatching season, they should lay, on an average, twenty to thirty eggs per hundred hens each day during December, January and February.



“White Wyandottes are one of the best general-purpose breeds.”

Is practical poultry keeping more profitable than fancy poultry keeping?

The most profitable type of poultry farm is where the farmer combines the keeping of poultry and producing for market with keeping pure-bred poultry for sale for breeding purposes. This will include the sale of eggs for hatching, day-old chicks and of pullets and cockerels in the fall of the year, or hens for breeding purposes, as well as the sale of broilers and eggs for market.

Which are the better for winter layers, pullets or yearling hens?

Early-hatched pullets are considered the better winter producers. The hens, however, are about equal to the pullets after the month of January. The largest egg yields are secured during the first year after the pullets lay their first eggs, but there are many notable exceptions to the rule. In many instances the highest production is during the second year, and in rare instances, in the third year. Where the fowls are in good health it is generally desirable to keep the very best hens for two or even three years, although they may not lay as many eggs as pullets. This is because it will make unnecessary the rearing of so many pullets each year and will enable the use of hens instead of pullets for breeders.

What would you consider a fair average profit per hen per year?

Ordinarily the profit is understood to include the difference between the total value of the eggs sold and the cost of food and labor. Correctly speaking, the net profit includes only what is left after deducting the labor, the food, interest on the investment, depreciation, etc., which in the case of poultry is considerable, and frequently is the determining factor in deciding between profit and loss. Under ordinary conditions, a hen should cost from \$1.10 to \$1.40 per year, depending on the breed; the lighter fowls cost less than the heavier. Hens should lay from ten to eleven dozen of eggs per year, which should sell for about thirty cents per dozen. The labor is generally from one-third to one-half the cost of food, varying considerably. All things considered, we should expect to receive a net profit per hen of from \$1 to \$2.50 per year; the latter only in rare cases, with exceptional market facilities and a superior product.

Which are more profitable, the egg-producing or meat-producing hens?

Under our present market conditions, the egg-producing hens are by far the more profitable.

How many hens should there be in a flock, and what are the best breeds for market and eggs?

It is difficult to state how many hens can be kept in one flock. We see flocks containing as many as 1,000 to 2,000 hens giving the best of satisfaction. In other cases, flocks of even 200 or 300

fowls are not giving the satisfaction which similar fowls in flocks of 50 to 100 are giving. Much depends upon the ability of the caretaker as to whether he can profitably keep 100 or 1,000 fowls in one pen. Ordinarily, it is better to keep 100 or 200 fowls in one flock.

The best breed for egg production and market are the Plymouth Rocks, Wyandottes and the Rhode Island Reds. These are all general-purpose breeds, of medium to large size, laying a large brown egg, producing a goodly number of eggs, maturing their young and, in the end, providing an excellent product for marketing.

Which hens are the more profitable, large or small?

For a farmer or poultryman who has but a few fowls, the medium-sized bird is more profitable than either the large or small. This medium size or general-purpose bird will produce an average number of eggs, will hatch her eggs and mature her young, and at the end of the season will provide a good marketable carcass. The large fowl, commonly known as the meat type of bird, is less desirable, as it lays fewer eggs, is more difficult to keep and is not as good for hatching and brooding purposes; neither does it make as desirable a product



Barred Plymouth Rock

for marketing purposes. A small breed, commonly known as the egg-producing breed, is especially desirable on specialized farms where large numbers of birds are being kept. It is a question in such cases as to whether the medium or small-sized breed is the more desirable. It is generally held that the small-sized breed, commonly represented by the Leghorns, is more profitable under such conditions. Small breeds do not hatch and brood their young and are not as profitable for marketing purposes. Their principal point of merit is their ability to produce a large number of eggs on a low consumption of food.

What breed of chickens will be most profitable for the early market?

Probably the Wyandottes, Rhode Island Reds and Plymouth Rocks in the order named.



Prize Wyandotte

All things being equal, which breed will lay sooner, White Leghorns or White Wyandottes?

Ordinarily speaking, the Leghorns will mature more quickly and lay earlier than the Wyandottes. It is a question as to which breed actually holds the record of early maturity. Instances are known of the Wyandottes, as well as the Leghorns, maturing and laying shortly after four months of age.

Are the Minorcas considered as good layers as the White Leghorns?

The Minorcas rarely prove to be as good layers as the White Leghorns. They lay a larger egg, however, and in weight of production probably equal about that of the Leghorn.

Which strain of Leghorns are considered the best layers, white, brown or buff, single comb or rose comb?

The White Leghorns are considered the best of the Leghorn family. This undoubtedly is due to the fact that the White Leghorns have been bred more extensively and with more attention to egg production than have the other varieties, naturally resulting in their being more perfected for laying than the others. For the same reason, the single comb Leghorns are favored more than the rose comb. There are strains of the other varieties of Leghorns which are equal to the White Leghorns.

What large breeds of fowls lay white eggs?

There are very few heavy breeds of fowls which lay white-shelled eggs, the principal ones being the Houdans, Minorcas and the Dorkings — an English breed.

Which kind of Rhode Island Red hens are the best to keep?

It matters little whether the single comb or rose comb Rhode Island Red is selected; one should be as good as the other. It so happens that the single combs are more common. They have been bred more generally, and consequently should be a little better in most respects. As a matter of fact, however, it is possible to get just as good rose comb as single comb.

Which breed would you raise to sell for friers?

The Wyandottes, Rhode Island Reds and Plymouth Rocks are the most desirable breeds to raise for friers. There is little preference between these three breeds.

On which system can the most profits be realized, that of having 500 hens in one long house or having about six hens each in 80 houses?

All other conditions being equal, the chances of profitably caring for 500 hens in one long house are better, in the long run, than that of six hens each in 80 houses. Such factors as housing, yarding and the saving of labor in feeding are well worth considering, and economy in each factor can more easily be practiced in the system of having 500 hens in one long house.

Are capons as profitable to raise for market as common fowls, and will a capon brood?

Under average conditions raising capons is quite as profitable as raising common fowls for market; however, it is generally

considered more profitable to raise fowls for their egg production than to raise capons.

Ordinarily capons will not brood. Instances have been reported where they have set upon eggs and hatched chickens.

What is the best method of feeding laying hens, and what rations are best for different seasons of the year?

When given dry feed only, laying hens have produced the most eggs at the least cost for both feed and labor, and have had better health. The ration should contain a good variety of economical foods fed in such a way as to induce plenty of exercise. The hens should have a keen appetite at least once a day. I would give to each thirty hens not to exceed one pint of mixed grain in a deep litter in the morning, and at night as much of the same mixture as they will clean up, keeping a dry mash before them in self-feeding hoppers from noon until night, with grit and shell before them at all times, and giving all the green food they will eat up during the afternoon unless they have access to green range.

The following ration is recommended:

CORNELL RATION FOR LAYING HENS

The following whole grain mixture is fed morning and afternoon in a straw litter.

BY WEIGHT		BY MEASURE	
Winter		Winter	
Wheat	60 lbs.	Wheat	32 qts.
Corn	60 lbs.	Corn	36 qts.
Oats	30 lbs.	Oats	30 qts.
Buckwheat	30 lbs.	Buckwheat	20 qts.

BY WEIGHT		BY MEASURE	
Summer		Summer	
Wheat	60 lbs.	Wheat	32 qts.
Corn	60 lbs.	Corn	36 qts.
Oats	30 lbs.	Oats	30 qts.

The following mash is fed dry in a hopper kept open during the *afternoon only*.

BY WEIGHT		BY MEASURE	
Winter and summer		Winter and summer	
Corn-meal	60 lbs.	Corn-meal	57 qts.
Wheat middlings	60 lbs.	Wheat middlings	71 qts.
Wheat bran	30 lbs.	Wheat bran	57 qts.
Alfalfa meal	10 lbs.	Alfalfa meal	20 qts.
Oil meal	10 lbs.	Oil meal	8 qts.
Beef scrap	50 lbs.	Beef scrap	43 qts.
Salt	1 lb.	Salt	½ qt.

The fowls should eat about one-half as much mash by weight as whole grain. Regulate the proportion of grain and ground feed by giving a light feeding of grain in the morning and about all they will consume at the after-

noon feeding (in time to find grain before dark). In the case of pullets or fowls in heavy laying, restrict both night and morning feeding to induce heavy eating of dry mash, especially in the case of hens. This ration should be supplemented with beets, cabbage, sprouted oats, green clover or other succulent food unless running on grass-covered range. Grit, cracked oyster shell and charcoal should be accessible at all times. Green food should not be fed in a frozen condition. All feed and litter used should be strictly sweet, clean and free from mustiness, mold or decay. Serious losses frequently occur from disease due to the fowls taking into their bodies, through their intestinal tract or lungs, the spores of the fungus causing molds.

How much does it cost to feed a hen per year?

This varies with breed, amount of eggs produced and price paid for feed — from \$1 to \$1.40 a hen per year, varying with the season.

Do hens laying eggs for hatching require a different ration to make vigorous chicks than a hen laying eggs for commercial purposes? If so, what would you recommend?

No, but they should exercise more and be given wider range than is usually given to hens kept for commercial eggs only, although this is necessary to obtain the maximum egg yield.

Would you advise using cottonseed or other high protein grain feed for poultry instead of beef scrap or ground bone?

Vegetable protein does not take the place of animal protein foods for poultry. Cottonseed meal is objectionable as it gives the egg yolks a greenish color and is injurious if fed in large amounts. Pea meal and peas are rich in protein and a splendid addition to the ration.

Are oats of any benefit as an egg-producing food? Is there danger of bad results by feeding fowls oats, whole or ground?

Oats are a good egg producer when mixed with other grains, forming 20 per cent. of the grain ration, or when ground, 10 per cent. of the mash.

Are boiled oats of more value than dry to laying stock?

No, dry grains give better results than wet or cooked.

Will ground green bone and meat make chickens lay; are they necessary? How much ground green bone should be fed and how often?

Green bone is not a necessity, but is quite a help to produce winter eggs. One-half ounce per hen per day is sufficient, and should always be fed fresh and sweet.

To what extent does green bone or meat scrap destroy fertility in eggs?

If fed in proper amounts, I doubt its affecting fertility. Overfeeding of any concentrated food with lack of exercise will produce weak, unhatchable eggs.

Which is the better for egg production, beef scrap or granulated milk?

Beef scrap generally gives the better results.

Will it pay to buy the prepared meat scrap which comes in 100-pound sacks for hens? If so, how should it be fed?

This is the most satisfactory way to purchase protein and should compose 10 to 20 per cent. of the mash. However, if one has plenty of sour skim milk, one-half the quantity of beef scrap would be sufficient.

Which is the better feed for poultry, whole corn or cracked corn?

Cracked is easier to digest, but the difference will not pay for the expense of cracking the small varieties.

Is oil meal among the most economical foods for hens?

Yes, when fed in small quantities. It is too laxative to form more than 5 per cent. of the mash.

Will sunflower seed fed to hens make them lay in winter? How much would you feed?

They are not worth the price usually charged for them, but are a good regulator and might compose 5 per cent. of the grain ration.

What is the value of buckwheat as a feed?

When it can be purchased at a reasonable price it may be added to the ration. It is similar to corn, being rich in fats.

Will mustard given to chickens in the feed help the egg production?

Mustard is liable to produce indigestion and should be used in very small quantities only.

Does milk given to fowls take the place of water, or should both be given, and will a hen eat too much of it? Will skim milk take the place of meat scrap in a ration for hens? Is sour milk, made into curd, beneficial to laying hens? Should sweet skim milk be fed to hens, and if not, why?

Milk is a good and economical food. Laying hens or growing chickens should be given all they want. Sweet milk is good, but sour milk is safer for at the turning point it is a strong laxative. This will replace one-half of the beef scrap and when curded, three-quarters of the scrap. Water should be kept before them at all times.

What method would you advise for feeding legumes?

Preferably green, cut in short lengths and fed in as large quantities as they will clean up during the afternoon.

Is alfalfa and dry-cut clover a good feed for hens?

Alfalfa is one of the best green foods. It is also valuable dry, preferably mealed. When this is not practical, feed from racks keeping it before the hens all the time. Cut clover is nearly as valuable as alfalfa and should be fed in the same way.

What kind of beet is best to grow for poultry?

Mangel-wurzel or half sugar mangel beets.

Would beet pulp be valuable as green food for poultry and if so, how should it be fed?

The wet pulp contains too much acid to be relished and I prefer not to feed it. The kiln dried when soaked is better, but even then is not a very good substitute for green food.

Which is better, beets or cabbage for hens?

There is not much difference in their feeding value.

Are apples good for hens?

Excellent, but there is danger of overfeeding, as they are more laxative than beets or cabbage.

Will laying hens eat too much green food?

Feed lightly until they are used to it, then there is very little danger of overfeeding.

What can be done to keep hens from setting?

By feeding to encourage egg production and removing them to new quarters.

Can you give me any remedy for soft-shelled eggs?

Soft shells are caused by fatty deposits around the oviduct preventing the secretion of the shell-making material. This conditions is caused by improper feeding and lack of exercise.

Are old fowls more apt than young ones to become fat on the same food?

Yes, and this can be avoided by a method of feeding which requires more exercise.

What is the matter with my hens? I feed buckwheat, a little corn and scraps from the table, but they do not lay.

You are giving a one-sided ration; give more protein and less fats; try the Cornell ration.

I am feeding my hens grit and plaster taken from an old ceiling for lime. Would shells be better?

These are good, but not sufficient. I would give grit and shells also.

Do Rhode Island Reds require more feed than Leghorns?

Larger bodies require more food to maintain them, also the large layers need more than poor layers. Food consumption depends on individuals more than breeds, although there is a little difference in favor of the Leghorns and small varieties.

Is it important to give hens hot water to make them lay in winter time?

There is not much gained in warming water, except to lessen danger of freezing the wattles.

Is it profitable to force hens for winter laying?

Heavy winter layers usually lay as many eggs in summer as those not laying in winter. They should not be forced enough to injure the health.

Are raw potatoes of any feeding value for laying hens in winter? Will boiled potatoes take the place of cabbage? Is a mash consisting of part boiled potatoes good for hens at noon?

Potatoes are too laxative to feed raw; a few cooked would be good to add to a fattening ration. They are of more value fed to pigs.

Should charcoal be fed in the mash or kept in a hopper?

A very small amount in the mash is sufficient, wet mash requiring more than dry.

What can be done to cause hens to molt in summer so they will lay in winter?

This can be done by restricting the amount of food consumed, giving only one ounce of feed per day per hen for about one month, but it is not advisable, for the hens thus starved, although they lay sooner than the others, lay less during the entire season and seem never to recover from the unnatural condition.

How can hens be cured of egg eating?

Since the habit of egg eating is usually due to the production of soft-shelled eggs, it is obvious that the treatment is to improve the method of feeding and provide sufficient mineral and

animal food to supply the needs of the fowl's body for the production of hard-shelled eggs. It is possible to stop egg eating by the use of China eggs. These eggs can be scattered in the nests and around the floor of the pens, and the hens will pick at them until they become tired and disgusted. The use of ordinary eggs filled with red pepper and mustard is also recommended, although this is inconvenient and not highly effective.

In extreme cases of egg eating, it is possible to cut back the bill of the fowl until the tender part is uncovered. Then, when the fowl endeavors to break an egg by picking it, the action will produce pain.

Is it necessary to have nest eggs in the henhouse?

Nest eggs are not necessary.

What causes a dark spot inside of an egg when the rest of the egg is all right?

The dark spot often seen inside of a fresh egg is caused by the discharge of a small amount of blood from one of the blood vessels supplying the glands within the walls of the oviduct. This blood is discharged into the eggs together with the albumen from these glands. Such eggs are more frequently found during the heavy-laying season when the glands are most active, and the blood vessels within them consequently more easily ruptured. Often the production of such eggs is limited to a few individual hens. In such cases, trap nesting will indicate which hens are producing such eggs, and they can be eliminated from the flock.

These dark spots make the egg objectionable from the customer's standpoint. The egg, however, is as good for eating purposes or for hatching purposes as if the blood spot was not there.

What is the best lice killer?

One of the best lice killers is the powder recommended by the Department of Poultry Husbandry at the New York State College of Agriculture. This is a homemade powder and consequently is much cheaper for the farmer or poultryman to use than the commercial lice powders. The following is the formula for making this powder and the method of applying it,

DIRECTIONS FOR MAKING AND USING LAWRY'S LICE POWDER

Spread two and one-half pounds of plaster of paris in a shallow pan or tray. Pour one-quarter of a pint of crude carbolic acid into a cup and into this pour three-quarters of a pint of gasolene. Pour this mixture over the plaster of paris and mix *thoroughly*. Rub through wire window screening upon a piece of paper, allowing it to stand for one and a half or two hours until thoroughly dry. *Do not place near a stove*. Keep powder in a *closed* can or jar. Apply by means of an ordinary sifter or with fingers, brushing the powder in among the feathers about the vent, fluff and under the wings. Repeat in about two weeks in extreme cases. Ordinarily, this need not be repeated for six months. A small pinch of the powder is sufficient for each fowl. To avoid tainting the flesh apply one week before killing.

In addition to using this powder, it is well to carefully and thoroughly spray all the perches and wall boards near the perches with a solution of one part crude carbolic acid to three parts of kerosene. In about ten days time this operation should be repeated in order to kill any lice hatched out of the eggs which were on the bodies of the fowls at the time of the first application.

How should nests for setting hens be prepared so as not to be troubled with lice?

The preparation of the nests is not so important as the preparation of the hens for setting. Fresh and clean material should be used for the nests. While it is not necessary to add a dust or powder as in a dust bath, it is always well to thoroughly dust the hens with the mixture given above, before placing them on the nests. After the hens have been setting for about ten days, another application of the powder should be made to kill the lice which have hatched out since the first.

Is there anything that can be used in the dust bath to rid hens of lice?

The most efficient material to use in the dust bath is a very fine powder, which the fowls can work into the spaces between the feathers and thoroughly cover the lice living on their bodies. The finer the dust, the more rapidly it can be worked into these places and the lice covered and choked to death. An excellent dust-bath material can be made from equal parts of land plaster and coal ashes. Road dust is also effective.

Would wood ashes be as effective as road dust for killing lice?

It is not as safe to use wood ashes as road dust in a dust bath for fowls since, if the ashes become wet, the result is the

production of lye, which will eat the skin and flesh on the fowls' feet and legs. A very small amount of this lye might be beneficial in more readily killing the lice on the bodies of the fowls. However, lice are ordinarily killed by filling the breathing pores; therefore, the finer the dusting material, the more efficient it would be.

Will lice live in a barn from year to year?

Lice will live in buildings for a long period, feeding on different kinds of grain and other materials scattered around the building. The length of this period depends upon the amount and kind of food available for the use of the lice, as well as the temperature and condition of the buildings.

What causes the comb to turn black and the fowl to droop around a day or two and die? What is the treatment?

This is a general symptom common to several troubles and it is impossible to give specific recommendations without more symptoms. The condition, however, is often due to a fatty, plethoric state which is brought upon fowls by overfeeding, especially when they are confined.

My hens seem to have some disease. Their eyes swell nearly shut and there is a discharge from the nostrils. Can you tell me if this is roup? If so, what shall I do for them?

The description given here is indicative of roup. It is first necessary to improve the condition which caused the outbreak, and it is also well to remove the affected individual to quarters separate from the unaffected fowls. The following simple remedy can be used: One ounce of permanganate of potash dissolved in three pints of water, using one pint of the solution in three quarts of drinking water. This remedy can also be applied to the individual as a dip. Grasp the wings and legs of the fowl in one hand and the back of the head in the other. Thrust the bill into the solution and hold there until the fowl draws in a slight amount of the solution while striving to breathe. This remedy can also be used as a spray by forcing it into the nostrils and through the slit in the upper part of the mouth. It cleans the discharge from the membrane in the nasal passages.

It is also well to paint or spray the perches with crude carbolic acid, creosol or carboleneum. The fumes from these will be breathed by the fowls while roosting, will loosen the discharge and help to clean out the nasal passages.

What is the cause of a hen losing the use of her legs?

Leg weakness may be due to one of several improper conditions: Confinement and a consequent lack of exercise; erroneous methods of feeding—principally too much stimulating food and too little green food; low vitality in the stock; dampness; injury or improper ventilation. The principal cause of leg weakness is the use of too stimulating foods given in too large quantities to fowls in rather close confinement. Fowls having free range are able to run off a larger amount of rich, stimulating foods than those confined.

Leg weakness generally indicates needed change in the method of feeding; namely, the fowls should be fed in such a way as to encourage exercise on their part. If they are being given rich, stimulating food, the stimulating ingredients should be removed entirely or partially decreased in amount.

What causes scaly leg and what is a remedy for it?

When the scales on the shanks of the fowls' legs have become hard and roughened and filled with dirt, the condition is called scaly leg. It is caused by small parasites which work underneath the scales and irritate the flesh. As these increase in number, the scales are separated and the space filled with dirt. The parasites spread from fowl to fowl by crawling along the perch.

The simplest treatment is to soften the shanks with warm water and carefully remove the filth from underneath the scales, follow with a thorough washing, using a 5 per cent. solution of carbolic acid, which will kill the parasites. The shanks should then be well greased with carbolated vaseline to keep the wounds soft and clean until they heal.

What will cure poultry of gapes?

A common method of treating chickens suffering from gapes is to thrust a horsehair or stiff thread saturated in turpentine down the windpipe. The turpentine kills and loosens the

worms, making it easier for the horsehair or thread to catch and withdraw them. Frequently several applications of horsehair and turpentine are needed in order to get all the worms. Many times they are loosened by the turpentine and later coughed up by the chickens.

Another and easier method of treatment has been recommended, but it is somewhat more dangerous than the horsehair and turpentine. Place twenty-five or thirty chickens in a small box covered with burlap. This box should then be filled with fumes from burning tobacco stems, supplied through a small opening in the bottom, which is fitted over a small fire box containing the burning stems. The chickens should be watched carefully and removed from the box as soon as they show signs of exhaustion, otherwise the fumes will overcome and kill them as well as the worms. The fumes kill and loosen the worms, which are then coughed out by the chickens.

Ground on which chickens suffering from gapes have run should not be used the following season, but a fresh piece of land chosen. It is well also to feed the young chickens strong onions or garlic, ground fine and fed raw or mixed with other food and given in their regular ration. The use of onions or garlic before the worms have appeared often prevents them from gaining a foothold sufficient to seriously hamper the growth of the chickens.

What is the remedy for hard crops?

Hard crop or crop compaction should be treated in the following way: Give the fowl two or three teaspoonfuls of castor oil, followed by massaging the crop until the contents soften. Then hold the fowl by the feet and gradually work the contents of the crop down through the mouth. When treated before the crop has become solid, the material can be softened sufficiently to allow her to pass it down the throat in the regular way.

After the crop has been hard for several days and the fowl has consequently starved during this period, it then becomes a serious matter, the fowl being in a weak condition and unable to stand a great deal of handling. If at this time the material within the crop cannot be softened sufficiently to make removal through the mouth easy, a slight cut should be made in the

skin just above the crop, the crop opened, the contents thoroughly cleaned out, and the lining of the crop washed out with a very weak solution of boracic acid. After the contents have been removed, the opening can be sewed up with one or two stitches of silk thread. This will hold the crop together and make it possible for the fowl to retain the food. If taken in time, this operation is very simple and seldom results seriously; but if the fowl has become too weakened through lack of nourishment, the shock of the operation will cause her death.

What can be done for a hen with a large, watery crop?

A large, watery crop is usually accompanied by over fatness in the fowl's body, or rather is a result of eating heavily and exercising too little. The crop becomes large through being distended with food, and when not so distended seems loose and watery. If the hen in this condition is laying well, there is little need of doing anything for the watery condition of the crop; whereas, if the hen is overfat, lazy and unproductive, it would be well either to market the bird and realize a profit from her carcass, or else feed her more sparingly and in a way that will insure greater exercise on her part and consequently better health.

Which is advisable, a brick henhouse or one of lumber?

It is difficult to state whether a brick house would be as satisfactory as one built of lumber. There are very few brick houses being used from which one can make observations. Since such houses are uncommon, it would be better to build of lumber than brick.

How many cubic feet of space is required for each hen?

Each hen should be given at least one and one-eighth cubic feet of air space, but if we allow only this amount for each fowl, the building should be constructed to accommodate one bird for every four feet of floor space and would be only about two feet in height. This of course would be an impossible house for a poultryman to care for. As a matter of fact, the common poultry house provides about eight or nine times as much air space as the hen actually requires, basing her requirements upon the amount of air space commonly allotted to cows.

What, in your opinion, is the proper height for a chicken house?

A poultry building should be constructed as low as possible and still provide sufficient head room for the person taking care of the fowls. The house which provides the greatest amount of floor space and the least amount of air space is the most economical to build and the most satisfactory to use.

What should be the dimensions of a house to keep 100 hens comfortable?

Floor space about twenty feet square should be allowed for a house to hold 100 hens, and the walls, both front and back, should be made only high enough to give the caretaker room to work comfortably within the pen.

In building a poultry house, is it advisable to have an air chamber in the walls?

In building a poultry house in extremely cold localities, it is well to have an inner boarding with an air chamber between the outside and inside walls, and even better to fill this space with straw or other bulky material and leave the inside wall rather open. Such a structure makes an extremely warm building. But it is unnecessary to go to this expense and trouble when building in a temperate zone.

Would you advise artificial heat for the henhouse?

It is not advisable to use artificial heat in poultry houses that are being used for egg production. Hens that are properly fed and managed will lay eggs in extremely cold houses. The artificial heating of poultry buildings involves a great deal of expense and, in addition, tends to weaken fowls. It is better to build a substantial house and line the walls and ceiling with straw or some other kind of insulating material.

What would be the best plan for a portable henhouse?

A portable henhouse is small in size and light in weight, in order to make the moving of it easy. It should also be designed so that it may be moved in an orchard with little damage to trees, etc. The A shape type of roof shown in the accompanying cut is very desirable for moving about from place to place, especially in orchards, the pointed shape of the roof making it possible to pass down between rows of trees without hitting

any very large branches. This house is eight feet square, and is described and illustrated in Cornell Bulletin 277.



Henhouse with A-shaped Roof

A shed-type of house is shown in the accompanying illustration. It is also a satisfactory type of building, and is used



Shed-type of Henhouse

in the breed-test work at the College of Agriculture. A more complete illustration of this house can be found in Circular No. 14.

What causes dampness in a henhouse, and how can it be prevented?

Dampness is caused by poor ventilation, lack of sunlight, too much filth, and a poor floor which allows the moisture to come up through it from the ground. Again, during extremely cold weather dampness is apt to be caused by the moisture in the breath of the fowls condensing before there is sufficient change of air to remove it from the pens. On a warm day the water dripping from the ceiling makes the pen damp.

If the dampness is caused by the condition of the floor, a better floor properly insulated should be constructed. This floor can be made of concrete, the insulation consisting of four or five inches of cinders, sand or gravel. If the floor is of wood, it should be raised above the ground several inches to allow the passage of air beneath, so as to keep the moisture in the ground from coming in contact with the floor. If the floor is of dirt and becomes damp, it should be filled in or built up with several inches of fine dirt, principally sand and gravel.

If the dampness is due to lack of sufficient ventilation, the openings in the side of the building should be increased in number, certain of them covered with glass to provide sunlight, and others covered with cloth to provide a means for the air to pass in and out of the pen, carrying with it the moisture which comes from the breath of the fowls and from their voidings.

If the dampness is due to the dripping of thawing frost from the ceiling, it is necessary either to increase the ventilation or to make the pen somewhat warmer. Warmth may be added by doubling the walls of the pen and using either a straw loft or a ceiling, either providing an air space between the pen and the outside boards. With these provisions, the inside layer of boards or ceiling does not become so cold, and consequently the moisture has more opportunity to be carried away and out of the pen before it condenses and freezes.

How should a henhouse be ventilated?

There are two principal ways of ventilating a henhouse: First, by the use of muslin cloth; second, by the use of ordinary glass windows.

When ventilating with the cloth curtain it is well to have three sides of the house perfectly tight, all of the openings

being on the fourth side on which is placed the cloth curtain. In a moderate climate, for a house about fifteen feet square, this curtain should be three feet high and five or six feet in length. It should be raised above the floor, preferably about three feet, so that when open the boards beneath the curtain will protect the fowls from the wind and rapidly moving currents of air which would naturally come through the opening on a windy day. The cloth curtain can be open on bright, sunny days, during the winter as well as summer, but should be closed at night and on very dark, damp or windy days.

When ventilating by glass windows it is well to have the windows placed vertically—one sash above the other—the upper sash hinged to the lower and arranged to swing inward from the top, so that it may be opened any desired width at the very top. This method directs all the incoming air toward the top of the pen, and distributes that air generally through the pen before it drops to the floor and comes in contact with the fowls. In extremely cold localities this latter method is quite as good as the cloth-curtain method, making it possible to close the house more tightly during extremely cold nights. A combination of these two systems of ventilation might well be put in practice. This would mean that a much smaller sized cloth curtain could be used, and when extra ventilation was deemed advisable the windows might be opened.

When extremely long pens or houses are to be ventilated, it is often better to use the window rather than the cloth-curtain system, in order to avoid the rapid circulation of air throughout the pen which cloth curtains allow.

For a henhouse, how many windows using cloth would be best?

In a building of this size it would be advisable to use but one muslin opening. This opening should be about three feet high by six feet long, and should be located near the center of the south side.

Should curtain windows in the poultry house be partly or wholly closed at night in cold winter?

Muslin windows should always be closed tightly at night during cold winter weather.

Would it be advisable to ventilate a henhouse from the floor instead of the roof?

There is too little evidence on this question to give a definite answer. The writer knows of one house ventilated through the exit opening only, the rest of the house being made tight. Ventilation within this building during the extremely cold weather seemed satisfactory. At least the production from this pen compared favorably with other pens of fowls. This house was in use in an extremely cold region.

Would you advise the use of a dropping board in a henhouse?

A dropping board should be used if the platform will not be over four feet wide. Under such conditions, its use really enlarges the floor space of the house, and makes it possible to keep more hens within the same area. When the dropping platform would necessarily be wider than four feet, it is a question whether or not the board should be used, because its use means that a bird on the perch or at the back of the dropping platform can be caught only with difficulty. Furthermore, the wide platform in a way restricts the amount of circulation of air among the fowls while perching, especially during the hot summer weather. In such a case the platform should be at a considerable distance below the perches, which would bring it too close to the floor of the pen, making the space underneath dark, where fowls might lay.

Are coal ashes a good absorbent for the platform in the henhouse?

Coal ashes may be used on the dropping platform in the henhouse to absorb the liquid of the droppings; but, although satisfactory, they are not as good for this purpose as land plaster.

When is the best time of year to hatch young chicks?

The best time of the year to hatch chickens for winter egg production depends upon the kind of fowls kept. For Leghorns, the months of April and May are the most desirable; for those of the American class, such as Plymouth Rocks, Wyandottes and Rhode Island Reds, the months of March and April are to be preferred; and for heavier varieties, Light Brahmas, Langshans, etc., an earlier date. The rule is based on the principle that a pullet, to do her best laying, must arrive

at the laying age just before cold weather sets in, which ordinarily in this state is in the month of October or early November.

Can one person successfully take care of 1,000 hens and do all the work himself?

A person can take care of 1,000 hens and do the work satisfactorily, providing the fowls are kept in large flocks in houses built properly with respect to ease of operation. This would not include the labor of hatching and rearing chickens, nor would it necessarily include the packing and shipping of eggs and poultry to market. Where fowls are kept in flocks of one hundred or more, and the modern labor-saving appliances are used, one man should be able to care for 2,000 hens so far as actual feeding of the fowls, cleaning the houses and gathering the eggs are concerned. However, on a farm where 1,000 hens are kept, usually two or three persons are employed to do all the work of caring for livestock and crops and marketing products. Much depends upon the kind of farming and methods of marketing, whether retail or wholesale, and whether eggs or stock are sold for breeding purposes.

Would you advise an incubator if raising on an average of 200 chickens per year? Are not many large breeders coming back to the use of hens?

To raise 200 chickens a year of the American class, hens can be used to great advantage; however, for the smaller breeds incubators are more economical. Under ordinary circumstances, to raise 200 chickens per year, incubators are more economical for hatching eggs. There are a few poultrymen in the United States who still hatch all their chicks by the natural method, but most of the poultry farms in New York State use incubators, and are now changing from the small to the very large Mammoth incubator. We are not aware that any large poultry farms have changed from incubators to the natural method of hatching.

Would it be practicable for a farmer to buy an incubator to raise March chickens?

Not unless he intends to keep Leghorns and expects to hatch from 200 to 300 pullets for fall and winter use. A small flock

of setting hens will be just as practicable as incubators. With Leghorns it would be necessary to have an incubator instead of hens.

Will it make any difference with the hatch if the incubator is filled with one-half brown Leghorn eggs and one-half Barred Rocks?

There is no difference in the operation of the machine if the machine is filled with one-half brown and one-half white eggs. White eggs will hatch from four to six hours earlier than the brown, so that the chicks in the white eggs will somewhat interfere with the hatching of those in the brown. The white and brown eggs can be placed in the machine with good success, and at the hatching time the eggs be separated and put in two incubators, the white in one and the brown in the other.

Which is better for hatching chickens, moisture or non-moisture machines?

The selection of non-moisture or moisture machines depends on the cellar or room where the machine is operated, as well as the altitude of the locality. If the machine is operated in a dry climate, the moisture machine, as a rule, gives the better results. The non-moisture machines, however, will give excellent results in a rather damp or moist cellar.

Is there any way to prevent chickens dying in the shell just before hatching?

If the chicks are dying in the shell just a few days previous to the hatch, it may be advisable to sprinkle them, or apply moisture in some form or other. Ordinarily the chicks do not hatch on account of lack of vigor, as well as faulty operation of the machine. Moisture alone will not prevent this trouble.

Are fireless brooders a success?

So far as we know, fireless brooders are not successful for a farmer or poultryman. They may be well adapted to keeping a few hens, but as a rule are not practicable on account of the large amount of labor and attention required for the chicks.

Which is the better to invest in, baby chicks or eggs for hatching?

Whether it is more satisfactory to purchase eggs or day-old chicks, depends upon a number of important factors, and no general rule can be laid down. For a person who is starting

in the poultry business in the spring with limited capital, who desires to avoid extra work and extra expense, and who is well enough acquainted with the one who sells day-old chicks to know that he will secure satisfactory stock, their purchase may be justified. The danger in buying day-old chicks is that an unscrupulous person may use an inferior quality of eggs for hatching which he would not dare to sell for hatching purposes because, after inferior eggs are hatched, chicks that show defects as to purity of breeding or vigor can be culled out, and only the better appearing ones sold. These, however, would carry inferior quality in their breeding. There is also danger from disease if day-old chicks are hatched in incubators where chickens having white diarrhea were hatched previously, without the machines being disinfected. The danger from injury in shipping day-old chicks, although usually of little consequence, nevertheless must be considered, especially if shipped during the extremely cold or very hot months when they suffer either from chilling or suffocation.

The chief disadvantages of buying eggs for hatching are, that generally the eggs are a little higher priced, in proportion, and danger from injury in transit, either because of rough handling, delay or improper temperature. The chance of injury to the eggs during incubation, as well as the extra cost of time and labor, and interest on the investment—incubators, incubator room, etc.—are items of considerable financial importance.

Can you give the amount of food per chick for each feeding?

A definite rule as to the exact amount of food would be difficult, if not impossible, to frame, as the amount of food would vary under differing conditions. A safe method is to feed according to appetite. Give always a little less moist mash than the chicks will eat and as much grain as they will clean up at each meal. Dry mash should be kept before them at all times, but they should be allowed to become hungry once a day, preferably in the morning.

What is the best feed for chickens from the time they are hatched until ready for market?

The following rations and method of feeding are recommended:

CORNELL RATION FOR CHICK FEEDING

THE RATION

Mixture No. 1

Rolled oats 8 lbs.
Bread crumbs or cracker
waste 8 lbs.
Sifted beef scrap (best grade) 2 lbs.
Bone meal 1 lb.

Mixture No. 2

Wheat (cracked) 3 lbs.
Cracked corn (fine) 2 lbs.
Pinhead oatmeal 1 lb.

Mixture No. 3

Wheat bran 3 lbs.
Corn-meal 3 lbs.
Wheat middlings 3 lbs.
Beef scrap (best grade) 3 lbs.
Bone meal 1 lb.

Mixture No. 4

Wheat (whole) 3 lbs.
Cracked corn 2 lbs.
Hulled oats 1 lb.

Mixture No. 5

Wheat 3 lbs.
Cracked corn 3 lbs.

THE METHOD

1 to 5 days

No. 1 moistened with sour skim milk, fed five times a day; No. 2 in shallow tray containing a little of No. 3 (dry) always before chicks. Shredded green food and fine grit and charcoal scattered over food.

5 days to 2 weeks

No. 2 in light litter twice a day. No. 3 moistened with sour skim milk, fed three times a day; No. 3 (dry) always available.

2 to 4 weeks

As above, except that the moist mash is given twice a day.

4 to 6 weeks

(or until chicks are on range)
Reduce meals of moist mash to one a day; No. 4 in litter twice a day; dry mash always available.

6 weeks to maturity

No. 3 and No. 5 hopper fed. One meal a day of moist mash if it is desired to hasten development.

FURTHER DIRECTIONS

1. Provide fine grit, charcoal, shell and bone from the start.
2. Give grass range or plenty of green food.
3. Have fresh, clean water always available.
4. Feed only sweet, wholesome foods.
5. Avoid damp and soiled litter.
6. Disinfect brooders frequently.
7. Test all beef scrap before feeding.
8. Keep chickens active by allowing them to become hungry once daily.
9. Feed moist mash sparingly.
10. Keep dry mash always before the chicks.

Are the infertile eggs taken from the incubator on the fifth or sixth day fit for human food?

Yes, infertile eggs at the fifth or sixth day are suitable for cooking purposes. If you have any young chicks, these eggs make very good feed; chopped up with the shell, they serve as meat food as well as lime. They are ordinarily utilized for this purpose, rather than for human food.

Would it decrease the value of beef scrap if cooked in feed for little chickens?

It may not decrease the value of beef scrap, but since the scrap has already been cooked, the extra cooking would tend to make it less palatable.

What is the best food to give young fattening chickens, and how should it be fed?

If the stock is young, the chicks should be gradually accustomed to the fattening ration. If moist food induces looseness of the bowels, give one meal a day of grain; two parts (by weight) of cracked corn, one part of whole wheat is a good mixture.

The following fattening ration has been used successfully: Equal parts of corn-meal, buckwheat middlings and oat flour and 10 per cent. beef scrap. This is mixed with sour milk — buttermilk preferred — to the consistency of batter, and allowed to stand twelve hours before feeding. Give all they will eat twice daily with no other food. Keep plenty of water before them.

Does it cost more to rear a Plymouth Rock than a Brown Leghorn until it is three months old?

I never have seen Plymouth Rocks and Brown Leghorns tested as to cost of rearing, but authorities seem to agree that the cost per chick for rearing to three or four months old is about the same for light and heavy breeds.

Are the brown shelled eggs any richer than those with white shells?

No, brown shelled eggs are not necessarily richer than white shelled eggs. It depends entirely upon the food which the bird is receiving and upon the individual bird.

Is there any difference in the food value of the eggs of different breeds of fowls?

There is no difference, perhaps, in the food value of the eggs of different breeds; however, individual birds differ considerably in the quality of the eggs they produce, due probably to their egg-producing organs, which vary in the amount of element which they enclose in the egg. I believe that the contents of the egg depend more upon the food which the bird obtains than upon the bird itself.

In shipping eggs for hatching, which end of the egg should be packed up?

Always pack with the large end up. This allows more room for the yolk, which rises, than does the small end of the egg.



TURKEYS

Can turkeys be hatched in incubators and cared for in brooders the same as chickens?

They can be hatched in incubators, but are not successfully reared in brooders, presumably due to their wild nature.

Please give directions as to how and when young turkeys should be fed and how cared for from the time they are hatched until five or six weeks of age.

They should be confined to a small yard, not more than twelve feet square, until they are old enough to jump over a



White Holland Turkeys

twelve-inch board. This will prevent their straying too far from their mother. After four weeks they can be given their liberty, shutting them up at night in the coop or in an open-front colony house. They can be fed the same as small chicks, and if possible, should be given plenty of curd. Crumbly bread and milk is good for the first few days in addition to the small-chick feed.

Please describe the disease of turkeys known as black-head and tell how it can be controlled.

The common external symptoms of blackhead are stunted growth and emaciated bodies, with usually a diarrheal discharge.

The post-mortem examination generally shows large and small decomposed areas on the liver and caeca.

Since the disease commonly spreads, it is essential that the chicks or turkeys be brooded on fresh ground each year, fed a nourishing ration, and the brooders and feeding boxes disinfected. In case hens or turkeys are used to brood the chicks,



Flock of Thirteen Hundred Turkeys

only the healthiest and strongest should be selected as a diseased hen may transmit the disease to her young. As chickens and turkeys grow older the feeding places should be frequently changed to prevent contamination of the ground and the spread of the disease.

What can be done for young turkeys when they have the cholera?

Cholera is a communicable disease and consequently requires different treatment. When the flock is small it is generally advisable to kill the entire flock, disinfect the houses and yards and restock with healthy fowls. It might be well to add that cholera is not common in the North and that the term "cholera" is often applied to dietary troubles.

DUCKS

Are ducks profitable to raise?

Yes. Especially when made an exclusive business and raised in large numbers.

What kind of ducks are the best layers and pay the best?

Indian Runners are claimed to be the best layers. Most ducks are raised for meat and sold as squab ducks at ten weeks of age, and the largest profit is made in this line of the duck business.



FORESTRY

“What a noble gift to man are the forests! What a debt of gratitude and admiration we owe for their utility and their beauty!”

SUSAN FENIMORE COOPER

FORESTRY

What is the state doing to encourage reforestation of unprofitable farm lands?

The state grows in the neighborhood of five million trees annually, which are distributed to citizens of the state of New York at cost price. The legislature of 1912 enacted a law exempting for a period of years land which is reforested. (See Section



89, Chapter 444, Laws of 1912.)

Would it pay a farmer to reforest a piece of land that is stony or swampy and difficult to grow other crops on profitably?

Reforestation is a very profitable venture for the farmer. Under present conditions the average farm of the state is made up of a large percentage of land which is bringing in practically no return. In sections of the state where dairying is of importance, a great deal of the land that is now under grazing could more profitably be planted with trees. Forests will grow on almost any soil, and all land on farm property which is not true agricultural land should be kept in a forested condition. This would not only provide a very good financial return to the farmer in the way of cordwood, fence posts and lumber needed for the farm, but in many cases, he would be able to sell much material grown, and, according to the best available figures, would realize at least 6 per cent. on the investment of planting and the value of the land under the present market conditions. We must also bear in mind that in ten or twenty years from now the market prices of lumber will be higher than they are at present.

What kind of trees are best to plant on high, stony land?

That would depend on the moisture conditions. If the land is dry, pines would be the trees preferred, but if wet, spruce would be much better to plant. Cedar, if desired for posts or poles, would take such conditions very well.

Is it a practical and paying investment to set out old stony pastures to pine and spruce trees, and should the stock be kept off?

Yes, in about thirty years there will be returns. Keep the stock off the land.

What kind of trees are best to plant on wet, low land?

This question was partially answered above. Aside from spruce and cedar, the basket willow requires a damp situation and is usually quite profitable.

Is it practical or profitable to grow locusts for fence posts?

Much land on which it is unprofitable to grow farm crops will grow locusts with profit, and very rapidly. The only objection to them is that they are sometimes affected by the locust borer, which destroys them before they get large enough for use.

Where can these trees be obtained?

The state nurseries furnish at cost, namely, about \$1.50 per thousand for two-year-old seedlings, \$3.50 per thousand for three-year-old transplants and \$4 per thousand for four-year-old transplants, the following: White pine, red pine, Scotch pine, Norway pine and European larch. If it is desired to purchase trees from private nurseries they can be obtained from the Northeastern Forestry Company, New Haven, Conn.; D. Hill, Dundee, Ill.; or Thomas Meehan & Sons, Germantown, Pa.

What would be the approximate cost of planting an acre of forest trees?

The cost of planting an acre of trees varies with the local conditions. If the land is fairly level and not covered with much brush or stone, from 1,200 to 2,000 trees per day can be planted by two men, one man making the holes with the mattock, and the second man planting the trees. This is allowing ten hours' work per day, and of course, the cost



Grove of Norway Pine

would depend upon the “going wage.” In rough country where there is a great deal of brush, this number would drop down to 800 or perhaps less.

The usual planting space is six by six feet, and this spacing requires approximately 1,200 trees to the acre. The figure most used for cost of planting, figuring on three-year-old transplant stock, is seven dollars per acre.

What care do the trees require after planting?

After planting the trees do not need any care to speak of. In the case of pines, if they are planted in dense thickets, brush should be cut out in order to give the trees light enough to pull through. It is considered good policy by some to prune trees when they get the proper size, but it is hardly probable that this operation pays.

What is essential to protect farm woodlots in order to secure the greatest profit from them?

Protection from forest fire is absolutely essential, and this should be done for farm woodlots at all times and under all circumstances.

Grazing cannot be carried on in connection with this work; cattle must be absolutely excluded from the farm woodlot. When the trees are young the cattle will very seriously injure the tender shoots, and when more mature, if the stand is as dense as it should be, there will not be grass enough under the trees to make grazing possible.

The farm woodlot should also be protected from insects and disease by cutting out the affected trees.

If as stated, the growth of the tree comes from the leaves, what causes the roots to sprout at times and at other times decay when the top is cut off?

The sprouting of trees from the roots depends very largely upon the variety of the tree. For example, chestnut, basswood, elm and willow quite readily reproduce themselves by sprouts



from the stump when the tree is cut. On the other hand, this practically never happens with pine, hemlock, sugar maple and some other varieties of trees. The time of year also has an important bearing upon the question. Trees cut in winter or early spring when a large amount of nutriment is stored in the roots, are very much more likely to sprout again than if cut in late summer.

Will the Conservation Commission furnish a speaker on forestry for grange or other farmers' meetings; at what expense and to whom should application be made?

The Conservation Commission has made it a policy to furnish a speaker on forestry for grange and other farmers' meet-

ings, the expense incurred by the lecturer being borne by the state; the grange or other farmers' association furnishing the hall, light, etc. Application for speakers should be made to Mr. Hoover, Chief of Publication, Conservation Commission, Albany.

Has the State Conservation Commission any publications for distribution dealing with the question of forestry, and to whom should application be made?

Yes, the following bulletins giving information in regard to forestry have been issued:

- General Forestry
- Reforestation
- The Basket Willow
- Forests of Oneida County
- Forestry Lectures
- Forests of Warren County
- Shade Trees
- Forest Taxation

One on woodlot forestry and also one on forest fires will soon be ready for distribution. Application should be made to the Conservation Commission.

WALNUTS AND CHESTNUTS

Will the English walnut come true from seed or will the tree need budding?

It should be raised from seed, and the best types can be perpetuated by grafting. There are as yet no special varieties to recommend.

How old should trees be when planted?

From one to three years.

What kind of soil is best suited for English walnuts?

Any good, rich, loamy soil, with good drainage.

What is the average yield of a good healthy tree, and at what age will walnuts begin to bear?

They will begin bearing four or five years after setting, and a crop of one bushel from a fifteen-year-old tree is the record in Ontario County.

What is the cure for chestnut tree fungus?

The fungus causing the chestnut bark disease lives largely under the bark and cannot be reached by spraying methods. The only remedy is to cut the fungus out even if it takes the whole tree.

WEEDS

“ Rich soils are often to be weeded.”

BACON

WEEDS

How can the blue thistle be combated?

The blue thistle is a typical biennial with a taproot, which, when cut off three or four inches below the surface, will not grow again.

What is the best way to get rid of burdock?

Burdock is a biennial. Treat as you would the blue thistle. A half gill of salt applied to the wound will be helpful.

How can dandelions be killed? Is there any spray that is effective?

Dandelion can be killed by cutting off the roots four inches below the surface and spraying with the standard solution of sulphate of iron. Use a hand sprayer.

What should be done with ground overrun with sorrel?

Ground infested with horse sorrel should be fertilized heavily, preferably with stable manure. Raw limestone will help in the smothering, by increasing the growth of clover, timothy, millet or buckwheat. Cultivation has little or no value.

How can land be rid of milkweed?

Milkweed is a perennial with underground stems or latent buds. Pull by hand after a rain, when stalks have their growth and before the bloom appears, or even up to the appearance of the seed heads.

What is the best way to get rid of goldenrod?

Goldenrod is a perennial. Plow infested areas early and cultivate frequently. Sheep will destroy it if grass or other weeds are not abundant.

How can the white daisy be killed?

The white daisy is a perennial — a beautiful flower out of place. Cut off the crown just below the surface with a hoe; plow before the seed matures and cultivate frequently. Pasture with sheep. Follow short rotation.

What is the best way to kill the moss that grows in meadows and pastures?

Moss on the surface of fields indicates that the soil is acid. Apply any carrier in the form of lime in sufficient quantities to make the soil at least neutral, or better, alkaline. Follow the application of lime by a good harrowing with a spike-toothed harrow.

How can we get rid of quack grass?

Quack or couch grass is a perennial with numerous root stocks. Plow the area deep in May or early June. Cultivate frequently. This method has but little value in a wet season.

Will quack grass seed grow?

Quack grass does not produce many seeds but they will grow. It is chiefly propagated by its numerous root stocks.

What will destroy wild mustard in oats?

Wild mustard is an early blooming annual. Spray with the standard solution of sulphate of iron, if numerous; hand pull, if few.

What is the best crop rotation for land infested with mustard?

A good rotation on infested sites would be corn followed by potatoes or any cultivated crop, and this by timothy without a nurse crop.

What is dodder?

Dodder is a long, leafless vine or parasitic plant which gets its food from its host. Mow before the seeds mature if infestation is large. If in small patches, mow with a scythe, add straw and burn when the host is dry enough.

How can dodder in alfalfa fields be gotten rid of?

Dodder is not generally harmful in alfalfa because it is mown before the seeds mature. Otherwise, destroy as indicated above.

Will hard-wood ashes kill dodder?

Hard-wood ashes will not kill dodder.

How can poison ivy be destroyed?

Poison ivy can be destroyed by spraying with salt brine of a strength that will bear up an egg. This applies when found

on walls or stone piles. Otherwise, cut off as near the surface as possible and apply salt to the wound, from a quart to a peck — in proportion to the size of stump.

Is there any spray that will exterminate chickweed?

Spray chickweed with a solution of sulphate of iron, two pounds to five gallons of water.

What is the cause of chickweed coming where land has been cultivated for a number of years?

Chickweed comes from seed, because land is unoccupied, or not cultivated late enough.

If there is a heavy growth of chickweed on the land, should it be plowed under in the fall or spring?

If your site is infested with chickweed plow in the fall. Cultivate early in the spring.

What is the best time of the year to cut any kind of bushes, in order to kill them?

This depends very largely upon the kind. Plow sassafras under when the leaves are fully developed in early spring; cut off Osage orange very close to the ground any time from August 20 to September 20; peel willows in July; cut off sweet gum in August.

How can land be freed from the weed called buckhorn?

Buckhorn or narrow-leafed plantain is not a pure perennial. Clipping has little or no value; use the spud. Cut off its half-way taproot at least two inches below the surface.

What is the best way to kill wild morning-glory or woodbine?

Wild morning-glory or woodbine is a persistent perennial with fleshy or tuber-like root or roots. Cut off the vine a few inches below the surface every time it appears; this in time will destroy it. Do not let the seed mature.

Is there any way to destroy the weed called "butter and eggs"?

"Butter and eggs" is another perennial with numerous underground stems. Plow or stir the area infested during a drought — preferably in July and August.

What is the best and most effectual way to eradicate mallow or cheese weed?

Mallow or cheese weed is a perennial with a taproot. Cut off the root at least three inches below the surface.



Mallow

How can the Canada thistle be controlled?

The Canada thistle is a perennial with numerous underground stems. Do not let it go to seed and cut off the new shoots as often as they appear. This starves it to death.

Is there any way to kill wild lettuce, and how?

Wild lettuce is a biennial and delights in fence rows or fertile, uncultivated sites. Sheep are very fond of it and will destroy it; otherwise use the spud and cut off its roots at least three inches below the surface.

How can wild buckwheat be destroyed?

Wild buckwheat is an annual that is troublesome in early potatoes and corn. Cultivate late and shallow, using sweeps on the cultivator.

What will exterminate Buffalo clover?

Buffalo clover is a western weed and prefers a sandy soil. Frequent cultivations are helpful. Do not let its seed ripen.

What is the best method for destroying paint brush or orange hawkweed on land too shallow or stony to plow, or on a sidehill which cannot be plowed?

The devil's paint brush is a perennial of the worst type with underground runners. Spraying with sulphate of iron will be helpful. Use salt liberally.

Is there anything that will kill horse-radish besides digging it up?

Horse-radish is a perennial and can be destroyed by preventing the leaves from growing by persistently cutting them as they appear.

What is the best way to exterminate wild carrot?

Wild carrot is a biennial. Either pull up by hand before the seed matures, or cut off the taproot at least three inches below the surface with a spud. Clipping does no permanent good.

How can pastures be rid of hickory brush?

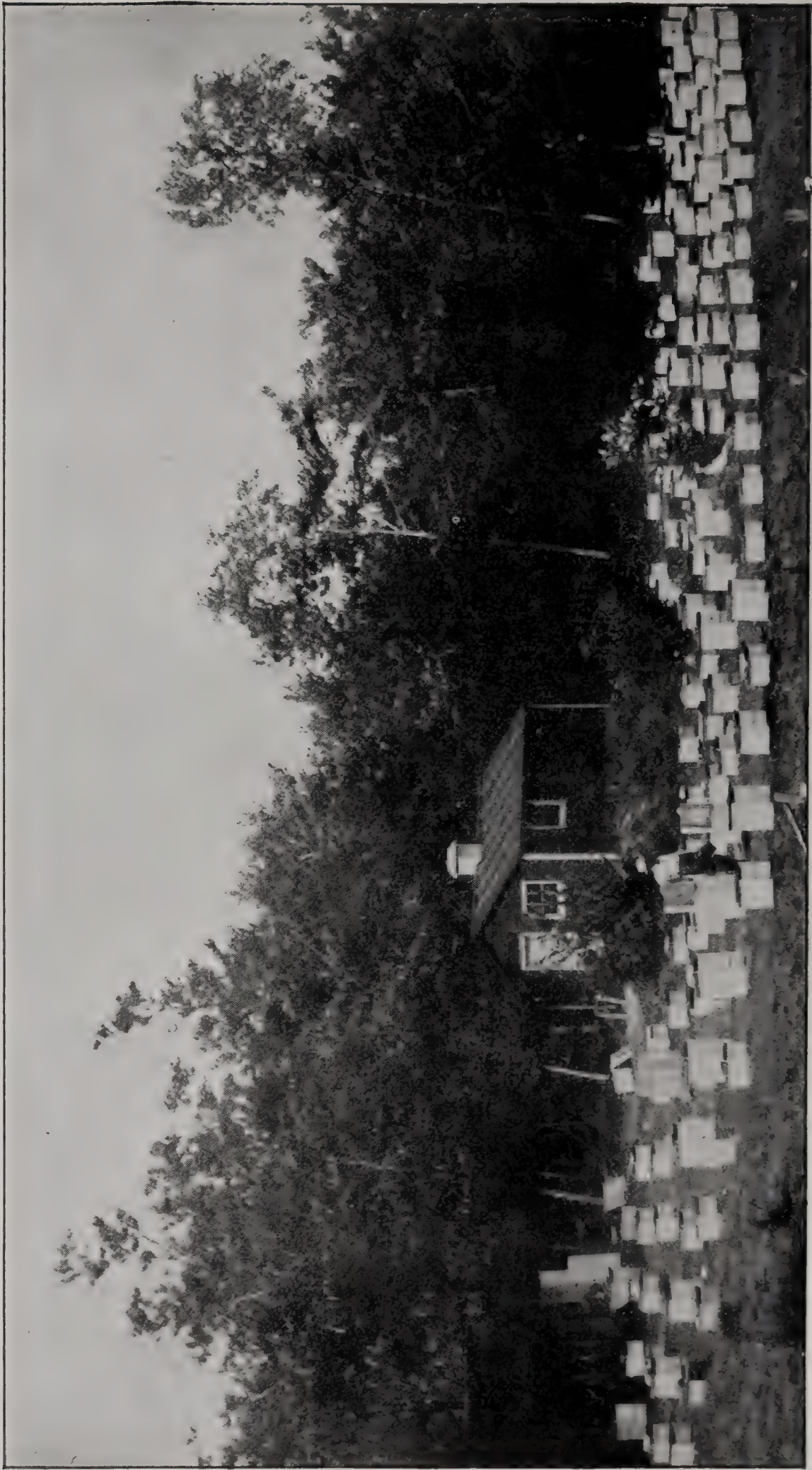
Hickory has a long taproot. Grub deep and apply a gill of salt to the part left.



BEES

“ Men may degenerate, may forget the art by which they acquired renown ; manufactures may fail, and commodities be debased ; but the sweets of the wild flowers of the wilderness, the industry and natural mechanics of the bee, will continue without change or derogation.”

From Burroughs' *Locusts and Wild Honey*



A Well-managed Apiary

BEES

Which is the best race of bees for general use?

All things considered, no other race is equal to the Italian. Their superiority has been demonstrated for years, and they are continually gaining in popularity.

How far will the different races of bees mix?

To breed them pure they should be kept three miles or more apart.

Are all pure-bred Italian queens yellow?

No; there is a great difference in the color of queens. Pure ones may be either a bright yellow, tan or dark chestnut color, but equally good.

Why are some drones from Italian queens black?

The drones sport greatly in color, and dark or black drones are not necessarily an indication of impurity.

How can one determine whether his bees are pure Italians or good hybrids?

The standard test for pure Italians is that all of the workers shall show three yellow or tan-colored bands on the abdomen. Two of these are broad and one narrow, the latter situated next to the thorax. A cross between the Italian and black or German bee gives some workers which show from one to three bands; others none at all. They are also much more vindictive than the thoroughbreds.

Are thoroughbred Italian bees wholly immune to European foul brood?

No. Occasionally a colony will contract the disease; however, they are so nearly immune that to-day they are the greatest aid that the beekeeper can command in the control and suppression of this scourge. No other race of bees equals them in this respect.

Which is better for rearing queens, a cell constructed in natural swarming or by a colony which is superceding its queen?

I prefer the former, although good queens are frequently produced by the latter.

What is the easiest way to produce queens in large numbers?

Probably Case's method gives best results. It is as follows: Procure a comparatively new comb, one that has been bred in once or twice, and place it in the center of the colony containing the queen you wish to breed from. Leave it until the fifth day, when if the eggs and larvae extend two-thirds across the comb it is ready for use; if not, wait a day longer. Then remove the comb to a suitable place, protected from heat or cold as the case may be, lay it flat upon a table or board and with a sharp knife score the comb to the midrib, lengthwise of frame, in rows of one cell and two cells alternately. With a sharp chisel shave off the cells from the double rows down to the midrib. This leaves the single rows standing. Be sure to destroy all eggs and larvae where the comb is shaved off — a match will be handy for this purpose. Then commence on the single rows of cells and, leaving the first egg, destroy the second and third; leave the fourth, and destroy the fifth and sixth, and so on throughout the single rows. Next take an empty super, drive three eight-penny nails in the ends and side, two and one-half inches from the bottom, on which to place the comb with the prepared side downward. Then cover the upper side of this comb as it lies in the super with a warm blanket lying flat against it.

Select a strong colony, full of brood and young bees, remove the queen and all of the brood disposing of them elsewhere, fill the hive with empty combs, full sheets of comb foundation or starters. If no honey is being gathered from the fields give them a comb of it, also feed liberally every day or two while cells are being built.

Now place the super containing the prepared comb on the queenless colony. The queen cells will be ready for use the eleventh or twelfth day. Remove the cover, using a little smoke to drive the bees down into the hive, brush off the remainder, being very careful not to injure the cells in any way, place the cells in queen cell protectors and these in your nuclei or queenless colonies.

How can I introduce queens in a safe and simple manner?

There are many comparatively safe methods. Always be sure that the colony to receive the new queen is queenless, but

it is best not to remove their queen more than four days before introduction, and the new one may be placed in the hive at once or the next day after removal during a honey flow. If the new queen is received by mail, place the mailing cage containing her in the hive and follow the printed instructions for liberation accompanying her. If queen is taken from the same yard, put her into any ordinary provisioned cage and place in hive. There should be sufficient candy in the cage to keep the queen confined a few days. Of course this candy



must be accessible to the bees of the colony so that they can release her. Another method is to use what is called a surface cage, which is made of wire cloth with corners cut out, the edges turned over one inch and raveled out one-half inch. Shake the bees off the comb where you desire to place her, take the comb inside of some room where the queen cannot escape, let her crawl upon the comb and place the cage over her, and include a number of open cells of honey so that she may feed herself. Push the cage into the comb up to the cross wires. If convenient some hatching brood may be included under the cage. Examine the colony in two or three days, and if the bees seem amiable and do not ball the cage it may be removed and the queen given her liberty.

A very valuable queen may best be introduced by placing her on one or more frames of hatching brood from some strong colony. Place them in an empty hive with division board

follower, close the entrance and place the hive in a warm room for a few days, when they may be set upon a stand outside and built up to a full colony.

Should a laying queen take wing and enter some other hive, what chance would she stand of being accepted?

Should she enter a normal colony containing a good, vigorous queen, I believe her chances of long life would be very slim; at any rate, I would not care to insure her.



Fig. 1



Fig. 2



Fig. 3



Fig. 4

1, Queen Bee; 2, Drone; 3, Worker (enlarged);
4, Queen Cells

How can we control swarming, keeping the workers at home and forcing them to work in the supers?

Prevent conditions which induce swarming, such as a crowded condition of the hive, lack of room for both workers and queen,

lack of ventilation and shade in hot weather. Breed from non-swarming strains of bees.

One effective method of preventing swarming is to cage the queen in the hive, removing all queen cells that may be present at the time. In seven or eight days again remove all queen cells, and in from two to six days later liberate the queen. She will be kept busy for some time afterward replenishing the brood. If the queen is over two years old, she may be destroyed at first and a queen cell left at the second cutting to replace her.

With a good strain of bees and plenty of nectar in the fields, I find but little trouble in inducing them to enter the supers when the colony is in normal condition and contains a large force of workers.

What is the best method of obtaining increase in the apiary?

Some apiarists maintain that natural swarms are best, that they work with a zest surpassing all artificially-made increase. However, with proper management and precaution, the latter have proved to be the equal of the former in production, besides giving several distinct advantages. If the apiarist has his colonies in proper condition, he can make his increase at the beginning of the honey flow, or at any time he may desire, and do it rapidly; whereas, if he depends on natural swarming, he must spend the best part of every fair day in the apiary watching and waiting for swarms during the swarming season, which often continues for from four to six weeks. This means the loss of much time, besides useless labor and perplexity.

The forced swarms should be made at the commencement of the natural swarming season, so as to forestall swarming in the main and speedily get all colonies in condition for the honey harvest. After division, if given sufficient room for storage and ventilation, there is usually not much danger of swarming.

Various methods of making increase have been given from time to time, but the one that suits me best and is the nearest approach to nature is the following: Prepare the new hive,

preferably filled with frames of wired foundation, take it to some good, strong colony, which is to be removed from its stand and the new hive set in its place. Now remove the combs of the strong colony, keeping a watch for the queen, and shake most of the bees into or in front of the new hive until you have two-thirds of the bees — say, five out of eight combs, or six from a ten-frame hive — and the queen. Replace all combs in the old hive, remove it to a new stand wherever desired and give a ripe queen cell or a laying queen after a day or two. The best time of day to operate is toward evening, as some artificial swarms, as well as natural ones, become discontented and leave their hives, but when hived at evening usually become settled before morning. The entrance to the old hive should be contracted for a time, as most of the old bees will join the shaken swarm. Do not divide a colony that is not fit to swarm naturally. Many beginners who are anxious for increase divide their colonies to such an extent that they have only a lot of nuclei, unfit for either storing surplus or wintering.

Would you advise a beginner to adopt the Danzenbaker or dove-tailed hive?

I would recommend for universal use the dove-tailed, ten-frame Langstroth hive, with Hoffman frames in the brood chamber at least. This is a standard, all-purpose hive. It is suitable either for comb or extracted honey production, and with all necessary paraphernalia can be obtained from nearly all bee supply dealers. The Danzenbaker hive handles very well before bees are placed in it, but after they have occupied it a year or two it is a perfect nuisance to handle, and besides has no advantage over the standard Langstroth.

What is the best manner to winter bees, a part of which are in old-fashioned box hives and a part in modern frame hives?

The style of hive is unimportant unless it be a chaff-packed winter hive, which may be wintered outside. In this latitude all others should be placed in cellars or special repositories where the temperature will not go below the freezing point. Anywhere between 40 and 50 degrees is safe. The repository should be well ventilated, keeping the air fresh. The hives

also need more or less ventilation, depending upon the temperature of the cellar. The bees should be kept in the dark, and quiet; the hives supported from the ground or bottom only, having no connection with upper floors, to avoid the transmission of jars.

A boiler or furnace in a cellar where bees are wintered is not objectionable. A cellar so heated has wintered bees successfully for years.

How many frames of honey are required to winter a colony?

That depends upon the size of the frames, the size of the colony and where wintered. The regulation amount of honey or stores required by a colony between the honey seasons is 30 pounds. A Langstroth frame filled with honey will weigh from six to eight pounds, depending on the thickness, hence, four or five full frames, or eight or ten half-filled, would be required. Probably from 50 to 100 per cent. more will be needed for wintering out of doors than in a good cellar. Small nucleus colonies can be wintered indoors on three or four Langstroth combs half-filled with honey.

What sized entrance should be given to hives in winter?

When wintered indoors the size of entrance is not so important; in fact, the whole bottom may be open with top closed or vice versa. A little ventilation given at both top and bottom is perhaps best, but be sure that rats and mice are kept caged. In outdoor wintering the entrance may be from one-fourth to three-eighths of an inch in height and from four to eight inches in length. If more than this height is given, mice are likely to enter, and this must be guarded against. See that entrances are kept free from dead bees, ice and snow.

In case bees have no late fall flight before placing in winter quarters, would the result be disastrous?

While it is desirable that bees have a good free flight shortly before housing them, I would put them in regardless of it when the proper season arrives, which should be before severe cold weather, perhaps November 15 in central New York. With food of good quality and the observance of proper conditions in their repository they should be in good condition in the spring.

Is it advisable to take bees out of the cellar for a midwinter flight?

Ordinarily it is not. If they are wintering well it would be worse than useless since it would cause much disturbance to the bees, as well as much labor for the owner, without a corresponding benefit. Occasion might arise where it would be beneficial, but rarely.

How should bees be handled in spring to prevent dwindling?

Leave them alone, in the main. Examine each colony just enough to ascertain whether it has a good laying queen and plenty of stores to last a month or two, tuck them up warm and give them time to rear a lot of young bees, which will lessen or remove the danger of dwindling. A telescoping cap, even if shallow, that will cover the joint between the hive and cover and provide an air space between the cover and cap, will afford much protection. Give them a small entrance to keep out cold and wind.

Is it desirable to place bees upon the same stand in the spring that they occupied in the fall?

Apparently it makes but little difference where they are placed in the spring when first set out, and if for any reason it is desired to move them from their previous location this is the best time to do it.

Should weak colonies be united in the spring?

Little is to be gained by this. If the bees occupy three or more spaces between the combs on the first of May and have a good queen, they will probably pull through alone and make a good colony later. If they occupy but one or two spaces, break up the colony and use the queen elsewhere if needed.

In foul brood, at what stage does the brood become affected?

In European foul brood the larger portion of the larvae die a short time before the period of sealing, perhaps from eight to ten days old. In American foul brood the principal part of the larvae die after sealing, which is one of the characteristics by which it is diagnosed.

Will the introduction of Italian queens clean out foul brood?

I would not recommend that as a cure nor expect it to accomplish such a feat. After the proper treatment of a diseased

colony they would assist greatly in keeping the disease of European foul brood at bay.

Would it be advisable to use combs which had contained American foul brood?

Most emphatically, no. Destroy them as soon as possible. They are dangerous to have about the premises.

Would stimulative feeding in the spring be of any use to keep down foul brood, and could anything be used in the feed to aid?

No, to both questions.

Are moth balls effective in preventing foul brood?

No.

Will freezing kill the wax moth or its eggs?

Yes, it is a very effective remedy where it can be applied, but the difficulty is that the moth does its principal work during the warmest weather. This fact is useful in connection with supers or hives containing empty combs or honey that is stored over winter for use the following season, which if exposed to a freezing temperature for a short time will remain free from the ravages of moths until again exposed.

In the production of extracted honey is it best to use shallow or deep frames?

The use of the standard depth L frames saves much labor and expense in a large apiary, since only about half the number of supers and frames are handled for the same amount of honey produced as in the shallow supers. The purchase price also is nearly double for the shallow ones. The shallow supers have one advantage—they are much lighter to handle and therefore preferable for the use of women and invalids.



HOME

Flowers

“ A house is built of brick and stone,
Of wood and beams and piers ;
A home is built of loving deeds
That stand a thousand years.

A house, tho' but an humble cot,
Within its walls may hold
A home of priceless beauty,
Rich in love's eternal gold.

The men of earth build houses,
With pillars, walls and domes ;
The women of the earth, God knows,
The women build the homes.”

HOME

What kind of grass seed is best for the lawn and how should it be proportioned?

Any of the leading dealers in seeds will supply mixtures especially designed for lawns, which will be found perfectly satisfactory and better than usually can be combined at home.

Should a lawn be rolled during the hot summer months?

No; it should be rolled in spring when the soil is moist.



Should a farm have a windmill and pipe the water to the house?

It is as essential that the farmer should have the water in the house as in the barn. Whether to use a windmill or some other means depends on local conditions. Windmills are practical where there is a large supply that can be drawn at will and a storage tank sufficient to hold the supply for several days when the wind does not blow. They require little attention, and under the above conditions are excellent. When these do not exist, a gasoline engine can be purchased for \$30 to \$35 that is simple, durable, and will work independent of wind. Where water will run by gravity there is no more desirable plan.

Is it not as essential in a modern farmhouse to have a bathroom as it is plenty of farm machinery?

A bathroom and other modern conveniences are most desirable in any farm home, but it is most likely that at the outset good farm machinery will enable the farmer to accumulate enough surplus funds to supply them, which he could not do without such machinery.

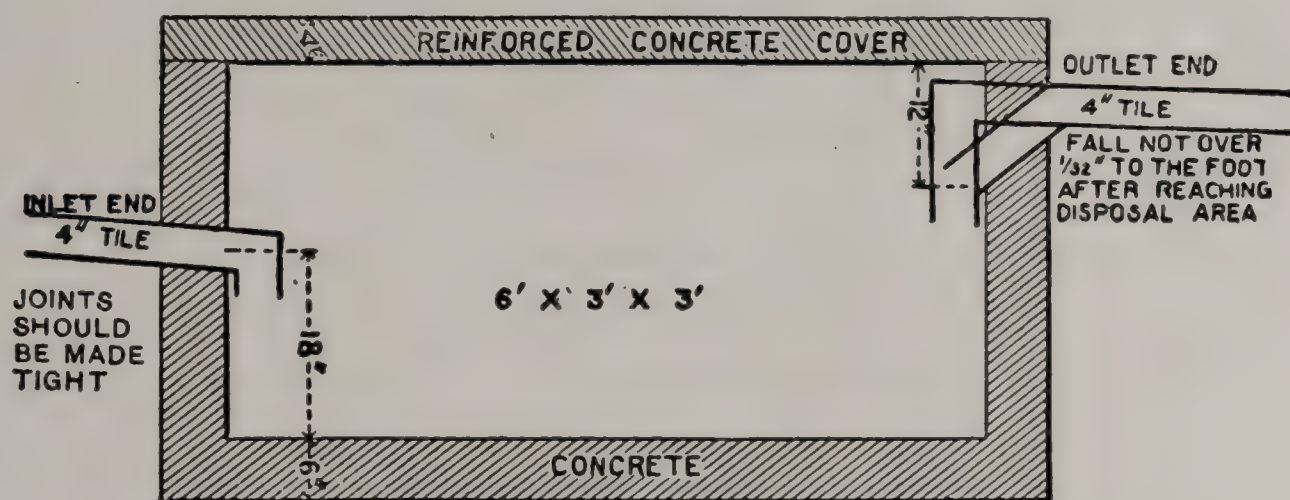
Would there be danger in using an abandoned well for a cesspool, other wells being about 140 feet distant?

Yes; this would be an exceedingly dangerous thing. It would contaminate the water in the old well, and if the water courses were in the direction of the other one the contamination might travel even a greater distance than 140 feet. A septic tank is the most safe and economical place in which to run the house sewage.

How should a septic tank for sewage disposal be constructed?

It should be made longer than wide; never less than 6 feet long by 3 feet deep and 3 feet wide. This is large enough for a family of six grown people. Add one foot to the length for each additional person. The top of the tank should be below the level of the point where the sewer pipe leaves the cellar. Since the inlet pipe enters one end of the tank, it should have an elbow that turns down to within 18 inches of the bottom. This pipe should be four inches in diameter, have tight joints, and a fall of not less than one-half inch to the foot. The outlet pipe should dip down so that the inner end is 12 inches below the top of the tank and the outer end only about one inch. The

outlet may be located any place where the soil is loose. It should be made from loose-jointed, porous four-inch tile, and should extend from 40 to 80 feet in a ditch 12 inches deep. It should have a fall of about one-thirty-second of an inch to the foot, and be connected with the overflow pipe with a tight-jointed sewer pipe with a fall of not less than one-sixteenth inch to the foot. This tank may be made of concrete, using about five sacks of cement, and in the concrete may be placed coarse stone. The walls should be four inches thick. Mix the cement one to three. When finished the tank should be tightly covered, without ventilation. It does not freeze in winter because heat is generated in the decomposition. (For further details see 1909 Farmers' Institute Report.)



Septic Tank for Family of Six or Less

What is the best finish for a kitchen floor?

I wonder whether the questioner means what material is best to be used for a kitchen floor or what finish shall be used for a wood floor.

The best material to be used for a kitchen floor is either maple or a good grade of linoleum laid over a wood floor. A maple floor for kitchen use should be neither stained nor varnished, but should be finished by saturating with boiling hot linseed oil, then wiped dry. This floor should not grease-spot and may be washed up and kept clean. It will be a very light color at first but darkens with time. Linoleum may be left as it is or covered with a good floor finish; but this will wear off and will need renewing from time to time.

What is a good way to care for hard-wood floors?

Wax and polish according to the directions on the can of floor wax. There is no easy way nor short cut to keeping hard-wood floors in good condition. As long as the film of wax covers the floor, the care is simple; when this wears off it should be renewed.

What can be done with an old board floor? I wish to use a rug and cannot afford a hard-wood floor.

The floor may be prepared by using a crack-filler. When the cracks have been filled, a covering for the floor next to the wall, as a border, may be made from the discarded covering of rollers at a paper mill. Matting may be used also, or ordinary wool felting. It is desirable, however, to have the floor fairly presentable so that it will not require covering between the rug and the wall. After the floor has been filled it may be covered for the distance required with paint or, better still, with a stain on top of a paint foundation.

Mrs. Monroe's recipe for a filler follows: Make a paste of flour and water and into this paste stir small pieces of newspaper, using a soft, wood-fiber paper. Let this mixture stand on the back of the stove for nearly all of one day, stirring it occasionally. Make this into a paste the consistency of putty and force it into the cracks. There must be a bottom to the cracks or it will be impossible to fill them.

How should linoleum floor covering be cared for?

There seems to be nothing better than mild soap suds for cleaning linoleum. Alkali cleaning preparations will eat the linoleum sufficiently to make openings for dirt to collect, and the effect is soon shown on the surface of the linoleum. The old recipe of placing skim milk in the cleaning water has its objections, since the milk combines with the dust to make a place for germs.

What color woodwork is preferable in a living room furnished in mahogany?

Cream white painted woodwork is the most appropriate setting for mahogany in whatever room used. Pine, oak or other hard woods are too vigorous and coarse grained to be used in connection with a fine-textured wood like mahogany. They do not furnish either texture or color harmony.

A great many houses in the country are old and have imperfect walls. What color paper would you suggest on such walls?

The fact that the walls are imperfect would hardly determine the color of the paper. It is sometimes better to treat the wall, in order to make it smooth, with a sizing made of laundry soap $\frac{1}{2}$ pound, powdered alum $\frac{1}{2}$ pound, ground glue $\frac{1}{2}$ pound, dissolved separately. The glue is stirred into the alum and the soap added. Add one gallon of water and apply the mixture to the wall with a brush. This might be followed by calcine, kalsomine, alabastine or a similar preparation. A good tint should be secured. The side walls may be sage green and the ceiling cream, or a tint of brown may be used on the side walls. It may also be put on with a large brush over wall paper which has become disfigured or faded, although it is difficult to cover in case of a prominent figure, and if aniline dyes have been used in the paper the figures will show through, otherwise the covering is a success. A disadvantage arises when it is desired to clean the paper off the walls later on. It is not a very clean job to remove from the walls paper which has had a dressing of kalsomine or similar covering.

What kind of paper should be used in a dining room seven feet high, with two east windows and one on the south?

As the room is low it might be desirable to select a paper with vertical lines. These lines should not be too prominent, and may be subdued by cross lines, such as is found in some paper, or with a conventionalized floral design not too conspicuous. Unless one has a good variety to select from it is safer to take plain paper. With eastern and southern exposure it is not as necessary to secure very light paper; however, avoid colors which will make the room seem low or dark, also papers with much yellow or red in their coloring. I would not advise a border in a room seven feet high. If possible place a moulding where the ceiling and side walls meet. The room is too low to drop a moulding below the ceiling.

Should moulding next the ceiling match the woodwork or the wall paper?

No general statement can be made which would cover all cases. If the room is low and the woodwork dark the moulding would better match the paper and so avoid a heavy line in the



One of the Attractive Farm Homes of New York State

angle between side wall and ceiling. In fact it would better match the paper anyway unless the moulding is on a level with tops of doors and windows, thus forming a continuous line around the room and tying all woodwork consistently together.

Would you use a cream ceiling with gray side walls?

It is better to use white with just a tint of gray than to use cream. A cream ceiling is better to be used with brown or buff side walls.

What is the best system of lighting for a country home?

Where one is in close proximity to an electric lighting system there is nothing better, although it is somewhat more costly. The acetylene gas plants as now constructed are, after the cost of installing, a very cheap and satisfactory way of lighting country homes.

Are the vacuum cleaners practical where there is no electric or other power?

At what price can good machines, both hand and power, be purchased?

Vacuum cleaners are effectual even though there is no electric or water power. Most of the hand-power cleaners require two persons to use them. A well-made vacuum cleaner is satisfactory in that it prevents the spread of the dust throughout the house as in sweeping. Pressure is produced to drive the dust into the tubes and from there into a receptacle from which it can be removed and burned. The prices for the vacuum cleaners without power vary from ten dollars to twenty-five dollars.

Is it practical to store ice for family use?

Yes. It is not necessary to have an expensive building, but always remember to have plenty of ventilation at the top.

What is the best way to keep ice from melting on the top?

Many ice houses are without ventilation, and in such the ice will always waste on top. There should be air enough to dry up the surplus moisture, as the dry covering is a better non-conductor than the wet.

Can you suggest a way of keeping food wholesome where there is no good cellar and ice is not obtainable?

If there is a convenient spring or well, food in proper receptacles might be lowered into the cool water. An outside cellar

might very easily be dug, that is, a small place in the ground or side of a hill into which food could be placed to keep cool. Such a place should be made rat proof by lining, or should contain a stone or metal container for the food.

What can the country woman use as a substitute for the coal and wood range in hot weather?

Good blue-flame oil stoves are to be obtained at hardware stores. Manufacturers now have made gasoline comparatively safe to use for cooking purposes; denatured alcohol is also used as a fuel, but has the disadvantage of not being as cheap as oil or gasoline, nor does it produce as good a heat.

What is the principle of the fireless cooker? Can such cookers be purchased or can they be made at home? What would be the cost in either case? Are fireless cookers a convenience and a help to farmers' wives?

The fireless cooker may be made at home or may be purchased in most towns. It is a modification of the old Dutch oven, consisting of a closely-built box with openings for utensils containing the partially cooked food. Around these openings is a packing acting as a nonconductor of heat, such as wool, excelsior, hay, etc. Boiling food never becomes hotter than 212 degrees Fahrenheit; more heat only produces steam, hence heat beyond that necessary to keep the food at 212 degrees is wasted.

The food is heated to the boiling point on the stove, is left there long enough to insure the same temperature throughout. It is then surrounded quickly with the heat-retaining material and cooks by its own retained heat. Fireless cookers are a great convenience; they save fuel, and many articles cooked in them are better than when cooked on the stove.

What is paper bag cookery, how can it be done and what are the advantages? What articles of food can be best cooked in this way?

In paper bag cookery the food to be cooked is put in well-greased paper bags (made for the purpose) and placed on the rack in the oven. Meats, biscuits and many other foods can be cooked in this way; enthusiasts for the method even prepare soups and stews. It is claimed that flavors are retained and that washing pans is eliminated. There is, however, the danger that the bag will break, as well as the difficulty of telling when the food is cooked.

Please give a recipe for making bread.

For one loaf use :

1 cup liquid (milk or water or both)	1 teaspoon to 1 tablespoon of shortening
1 to 2 tablespoons sugar	1 teaspoon of salt
$\frac{1}{3}$ cup liquid yeast or $\frac{1}{4}$ to 1 yeast cake softened in $\frac{1}{3}$ cup water	Flour about 4 cups.

Scald the liquid, if milk, add shortening, sugar and salt and cool until lukewarm. Add the yeast and mix thoroughly, then sufficient flour to make a batter, beat well, add flour to make a dough and knead until no longer sticky. When light shape into loaves and let rise again. Bake in a moderate oven 50 or 60 minutes. If the loaf is turned after it has been in the oven one or two minutes it will prevent breaking.

What causes bread to sour?

The sourness is produced by bacteria found in the dough. These may come from dirty utensils, from the flour or may be introduced with the yeast. The lower the grade of flour, the more chance of introducing the bacteria. If the bread "over-works," that is, proceeds beyond the usual time of fermentation, it will probably sour.

Why is milk less nutritious when cooked?

Milk contains, besides its food ingredients, certain chemical substances known as enzymes. These substances also exist in our bodies, those in the digestive tract being important factors in digestion. The active power of enzymes is destroyed by boiling. Enzymes in milk are supposed to act like digestive enzymes in the body and so aid in the digestion of milk. Since boiling destroys their activity, cooked milk is supposed to be more difficult of digestion than uncooked milk. It is doubtful if the difference is great enough to ever be considered in feeding the normal, healthy adult.

What causes custard pie to whey?

Custard has as its principal ingredients eggs and milk; both contain a large amount of water. Eggs also contain a large amount of albumen. A custard mixture, then, is a liquid

through which albumen is pretty evenly distributed. Albumen coagulates upon being heated, the greater the heat, the more it hardens and "draws together." If the heat is too great it will draw together so it becomes separated from the liquid. The liquid is squeezed out very much as water might be squeezed out of a water-soaked sponge. To avoid this bake the custard in a very moderately heated oven.

How can salt be prevented from hardening in salt cellars?

Mix it with a little cornstarch.

Is beet sugar successful for canning fruit?

Yes; chemically and for all practical household purposes there is no difference between beet and cane sugar.

Give general directions for preserving fruit.

Select, clean, pare, core, slice, etc.—that is, according to kind of fruit prepare it for cooking. If thick preserves are desired add sugar equal in weight to weight of fruit. Cook in this syrup (it may be necessary to add small amount of water) until the fruit is transparent and the mixture is of the desired consistency. Put into clean glasses or jars, cover and set away. If less thick preserves are desired add three-fourths as much sugar by weight as weight of fruit, cook to desired thickness, pour into sterilized jars and seal.

What is the best method of canning corn, peas and beans?

The best method for all vegetables (tomatoes may be excepted) is as follows:

Clean and prepare vegetables, pack in cans, fill the cans with water, add salt if desired, place a rubber on the can, then the top and seal. Set in a boiler or kettle of cold water on a wooden rack and so that the jars do not touch each other; bring the water gradually to a boil. Boil about an hour, or more if cans are large. Let cool. The next day bring gradually to boil again and boil an hour. Repeat the process on a third day.

Vegetables are apt to have spore-forming bacteria. These spores are resistant forms into which bacteria may pass to withstand unfavorable conditions. When favorable conditions re-

turn the spores again turn into their bacterial phase. One boiling destroys all the bacteria, but boiling for hours may not affect the spores. If, however, they are allowed to stand about twenty-four hours in moderate temperature the bacteria again germinate. These are killed easily by the second-day boiling. The can may be sterile now, but the process would better be repeated a third time for safety to destroy any bacteria which may have formed from one or more spores escaping the other processes.

These are only general directions. So many factors of change may enter in from year to year that a rule working one year may not the next.

Can tomatoes be preserved without cooking and how?

For all practical purposes no, but sometimes it is possible, if the fruit is sound and the hull left on, to preserve them a few weeks or months in a heavy brine. The skin, however, must not be broken.

How old must one be to enter the home economics course at Cornell?

To enter a regular four-year course at the College of Agriculture, a boy must be seventeen and a girl sixteen. The age limit required for the short winter course is eighteen.

Why not have a Cornell home economics cook book?

This has been considered from time to time, and should farmers' wives wish to send recipes to be tested it may be done by classes in the department. If recipes were published they would need to be standardized as to clearness, accuracy and good results. Doubtless a very good recipe book could be secured in this way.

What is necessary to secure the publications of the Cornell home economics department?

Application may be made to the Home Economics Department, New York State College of Agriculture, Ithaca, N. Y., for registration in the course. Persons living within the state of New York may receive the bulletins free of charge. The work is done under state appropriation; one bulletin is published each month upon some household topic.

How may pork be salted down so as to prevent spoiling?

In salting pork never use a cask that has had in it any other meat, and never use one that is not absolutely clean. A glazed earthen crock is best of all. A good way to clean an old pork barrel is to smoke it out with corncobs and then thoroughly scald. Have the pork perfectly cold before attempting to put in the barrel. Cover the bottom of the receptacle with a layer of the best rock salt, and set the pork on edge with the rind toward the outside. When the layer is completed, cover again with salt and put in another layer of pork, and so on. It is advisable that the pieces should be cut of equal width. After the last layer is covered with salt, make a brine strong enough to float an egg or a potato of that size; weight the pork down and entirely cover with the brine. The water should be pure; if there is any question about this, boil it beforehand, but never apply it to the meat until it is thoroughly cold.

Can a corned-beef barrel be used in which to salt pork, or a pork barrel be used to pickle corned beef with safety?

Never use a beef barrel for pork. A pork barrel can be used for beef.

How may hams be cured?

Take 4 quarts of fine salt, $\frac{1}{2}$ pound of pepper, 2 ounces of saltpeter. Mix thoroughly. Cover the fleshy part of the ham and hock with molasses, then rub on the above mixture, filling well around the bone. Put the hams in a barrel with the hocks up, and let them remain 48 hours.

After the meat has stood 48 hours take 8 pounds of rock salt, 4 pounds of brown sugar (or two quarts of molasses), 2 ounces of saltpeter and 8 gallons of water. Boil until no scum rises. When cold pour it over the meat. It will cure as much as it will cover—about the right quantity for ten ordinary hams. It is just as good for bacon. Let the meat remain in this brine about ten days; then remove and smoke. The brine can be reboiled and used for corned beef if desired.

Please give the best method known for preserving eggs. Can eggs so preserved be used for all purposes?

The following on the preservation of eggs gives the various methods which may be used and the comparative advantages of

each. Eggs preserved in water glass can be used for practically all purposes. Of various methods of egg preservation, the lime-water and salt brine and the water-glass solution seem to give the best results; the water glass the better of the two because of the chalky taste which can be detected in the eggs preserved in the limewater and salt brine.

Limewater and salt brine preservative.—Take four pounds of good quicklime in a small amount of water, mix with four gallons of pure water and add two pounds of salt. Stir this thoroughly several times, then allow it to settle and pour off the clear liquid, which is the part in which the eggs are to be preserved. This amount will preserve 30 dozen eggs, depending somewhat upon the shape of the vessel.

Water-glass solution.—The commercial water-glass solution may be obtained from any drug store at a cost of about 20 cents per quart. Mix one and one-half quarts with 18 quarts of pure water—water which has been boiled is preferable. Stir until thoroughly mixed, a stone jar being the most suitable vessel for the mixture. Two eight-gallon jars are sufficient for 30 dozen eggs, using the amount of solution prescribed above. After the water glass is thoroughly mixed, divide it into the different vessels to be used, being sure that the dishes are absolutely clean. Place the eggs in the water glass, seeing that the top eggs are covered by at least two inches of the liquid, and cover the jars to prevent evaporation. Place them in a cool place, where they will be undisturbed during the year.

Suggestions.—Preserve only absolutely fresh eggs; stale eggs will not keep in any preservative. Have the preservative ready to put the fresh eggs in as you get them. If in doubt as to their freshness, candle them, or place in a dish of pure water—if an egg sinks, it is reasonably fresh.

Do not preserve dirty eggs or eggs which have been washed. The washed eggs will not keep because the shell has been moistened, and the dirty eggs will become tainted in flavor.

Do not use the same liquid preservative more than one year. Spring eggs will keep better than summer or fall eggs.

Infertile eggs are better than fertile eggs for preserving.

Do not leave eggs in the preservative longer than one year.

Rinse the eggs with water after removing from the preservative.

Eggs which are in good condition when removed from water-glass solution will usually remain good for at least two weeks.

Water-glass eggs are practically as good as fresh eggs for all cooking purposes. If it is desired to boil them, prick a small hole through the large end of the shell before placing them in the water. The pores of the shell have been sealed with the water-glass solution, and without this pin hole the expanding air within the shell would burst it.

How can ink and fruit stains, iron rust and mildew be removed from clothing?

Ink.—This is often difficult to remove, as it varies greatly in composition. It is well to experiment with a corner of the spot before operating on the whole.

1. If stain is fresh, soak the stained portion of the cloth in milk, using fresh milk as the old becomes discolored.

2. Wet the stain with cold water and apply a ten-per-cent. solution of oxalic acid; let stand a few minutes and rinse. Repeat until the stain disappears. Rinse in water to which borax or ammonia has been added. (Oxalic acid is a very poisonous substance.)

3. Javelle water will remove some ink stains. Apply as for rust stains.

4. Treat with hydrochloric acid as for iron rust.

5. Treat with lemon juice and salt as for iron rust.

6. Use alcohol for some ink stains.

Milk is the only reagent given that does not remove color.

Iron rust.—Wet the stained part with borax and water, or ammonia, and spread over a bowl of boiling water. Apply a ten-per-cent. solution of hydrochloric acid, drop by drop, until the stain begins to brighten. Dip at once into alkaline water. If the stain does not disappear add more acid and rinse again. After the stain is removed, rinse at once thoroughly in water to which borax or ammonia has been added. The borax or ammonia is to neutralize any acid that may linger. Less dilute acid may be used if the operator is skilful.

Mildew.—Mildew is very difficult to remove if of long standing.

1. Wet the stains with lemon juice and expose to sun.
2. Wet with a paste made of one tablespoon of starch, juice of one lemon, soft soap and salt, and expose to action of sun.
3. Treat with a paste made of powdered chalk and expose to action of sun.

Fruit.— Spread stained surface of the cloth over a bowl or tub. Pour boiling water through the stained part of the cloth, pouring from a height so as to strike the stain with force. If the stain resists the boiling-water treatment, soak for a few minutes in a solution made from equal parts of javelle water and boiling water. Rinse thoroughly with boiling water to which a little dilute ammonia has been added. Repeat if necessary.

How can moths be gotten rid of?

Moths feed upon carpets and woolen goods, often following the lines of the floor cracks and thus making slits in the carpet. Eggs are laid and the larvae developed rapidly. Cleanliness of floors added to doses of petroleum products, such as gasoline or benzine, will help in their extermination. Clothing should be taken out of doors frequently, brushed thoroughly, sunned and aired.





FLOWERS

"Flowers are the sweetest things that God ever made and forgot to put a soul into."

HENRY WARD BEECHER

Please give short list of perennial flowers which grow readily?

Hardy phlox, hardy larkspur, Canterbury bells, Oriental poppy, the iris family.

How should very small seeds, such as the seed of the colons, be sown or germinated?

Use a soil mixture of one-third loam, one-third leaf mold, one-third sand and cover very lightly. Moisten with a very fine spray and shade with a piece of glass. Keep from direct sunlight in a moderate heat until seeds have sprouted.

When is the best time to plant gladioli bulbs?

When all danger of frost is past or when the apple is in bloom.

What care do gladioli bulbs need during the winter?

They should be kept in a place free from frost and moisture.

What care should be given salvia plants in the fall to insure blooming another season?

It is preferable to grow from seed each year. An early sowing will give an abundance of growth.

Where can the old-fashioned snowdrop be grown to insure best results?

In a partially shaded, moist situation, the north side of a building or where the drip of trees will not fall on it.

What kind of soil is best adapted to tulips?

A soil with plenty of vegetable matter and well drained so that the bulbs will not remain in water during the growing season.

Can daffodil and hyacinth bulbs be put in the ground during the winter, provided the ground is dry at that time and the weather mild?

The earlier in the season the Dutch bulbs are planted the more time they will have to make a root growth and, in consequence, will give better results than when planted later, but they can be planted with fairly good results even after the ground has been frozen.

Which fern is best for household purposes?

The well-known Boston fern.

Is the oleander a poisonous plant?

Yes, if taken internally.

Will castor-oil hurt a plant?

I cannot conceive how castor-oil could benefit a plant as it contains but little fertility and is not readily soluble in water.

What causes the stems of sweet peas to become shorter after the first or second picking?

The stems of sweet peas usually become shorter as the season advances, owing to the increase of heat and consequent lack of moisture.

What causes palms to turn brown and the leaves to dry up?

Palms sometimes lose their foliage or the foliage becomes injured, owing to an excess of water, insufficient drainage in the pot or a lack of water at some period in their growth, but do not show the ill effects until weeks afterward.



Dahlias

Why do the buds on a geranium kept in a living room drop off when about a week old?

Possibly because of an excess of water.

When is the best time to transplant rose bushes?

Rose bushes should be transplanted in the fall of the year while the plant is dormant.

When and how severely should a rose bush be pruned? How many branches should be left on the crimson Rambler?

If of the hardy perpetual variety, it should be trimmed from ten to twelve inches from the ground. Climbing roses should be pruned, for a pleasing effect, back to the live wood if they have wintered well. Three or four strong stems are better than six or seven. Cut out the older wood in early spring and cut back the remainder to healthy, well-ripened wood, removing crossed branches.

What is the cause of roses not blooming when the bushes look healthy and are growing well?

In some cases roses on budded stock become changed to the natural stock through negligence in removing the shoots which grow from the stock. Such growth is very vigorous often producing but few flowers. Excessive feeding may also over-stimulate rose bushes, causing a rank growth at the expense of flowering. Remove all suckers from the stock as fast as they appear and feed the plants judiciously.

What kind of a sprayer can be used for spraying rose bushes; what should it cost and where obtainable?

Rose bushes are usually troubled with slugs and aphids which can only be controlled by a contact spray. One of the small outfits used for putting fly repellent on cattle will serve the purpose.

What should be done for mildew on rose bushes?

This is a fungous trouble affecting many roses, especially the crimson Rambler, and is prevalent in moist, shady locations. Keep the bushes properly trimmed to let in sunlight and air and dust thoroughly every five or ten days with flowers of sulphur.

How may lice and other rose bush insects be killed?

Spray the roses with a solution of whaleoil soap — one pound of soap to five gallons of water. It is necessary to make several sprayings.

What causes narcissus buds to blast?

Weakness of the bulb, sometimes the result of planting too late or allowing it to remain in the same location year after year.

What causes blight of dahlia buds?

Dry weather very frequently causes what appears to be blight in buds, but which is merely a drying up. The brownish rose bug sometimes destroys the bud, and this is also taken for blight.

What will destroy red spiders on house plants?

Fern tree oil has been used in greenhouse work to good advantage, and frequent spraying the plants, especially the under side of the leaves, will keep them in check. They thrive best in a dry, warm atmosphere.

What will destroy aphids on plants?

One of the standard mixture preparations such as "Black Leaf 40." Directions for dilution are on the package.

Can you suggest a remedy for the aster beetle?

Arsenate of lead at the rate of one pound to 25 gallons of water is the best remedy for all leaf-eating insects. If the insect is not a leaf-eater, the plant may be treated with a solution of laundry soap (strong suds).

What will destroy worms in the soil of potted plants?

A small quantity of limewater once or twice a week.

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MISCELLANEOUS

“ There is always a best way of doing everything.”

EMERSON

[873]

MISCELLANEOUS

Does it cost the farmer as much for his education as any other person?

It ought to cost more since he has more things to learn.

Should a man farm who does not put his whole heart in the business?

No, nor do anything else.

Of what advantage to a young farmer is a course in an agricultural college?

It is of decided advantage, especially if he has farm experience back of it. It teaches him the underlying principles of his business, from which if a man works he is much more likely to succeed than if he simply works from tradition or custom. It also broadens his outlook on life, which in itself is desirable and makes him respect his business, which is still more desirable.

What are the qualifications for entrance to agricultural schools in New York State, and where are these schools? How can a young man get a training without a four-year course?

Many of our high schools now have classes in agriculture where a young man can get much practical knowledge. There are three secondary schools of agriculture in the state, at Canton, Alfred and Morrisville, where practical courses of one or two years are given, particularly adapted to those who cannot take the long or short course at the College of Agriculture, Ithaca. In addition to the above three schools already in operation, the state has provided for two more, one at Cobleskill and another on Long Island. An ordinary high-school education is required for entrance. It would be advisable to write to the institutions referred to for catalogs. The short course at the College, costing not more than \$100 (and this chiefly for board and traveling expenses), is highly commended to any young man from the farm. Failing in ability to embrace any of these, it would be advisable to seek employment with some up-to-date, pushing farmer. Such training is of the greatest value. Very much, too, can be done by reading, since there is a large amount of agricultural literature to-day which is simple and intensely practical.

What is your advice to boys with regard to taking a regular or winter course at the College of Agriculture?

A boy who is to be a farmer needs schooling in his life work fully as much as does the boy who is to follow any other profession or calling; therefore it is important that he should have some agricultural training. The full four years' course at Cornell is a most desirable one and gives a man the same prestige and standing as does a course in a college in any other line. Aside from the subject matter acquired, the intercourse with intelligent men and fellow students has a broadening effect, which is in itself worth while. Moreover there is engendered a respect for the calling, and the dignity of agriculture is appreciated as never before.

Would it be advisable for a young man intending to be a farmer to attend any college other than an agricultural one?

For the right kind of a man any college education would be of undoubted benefit to a farmer, but why such should attend any but an agricultural college is as difficult to see as why a man intending to be a civil engineer should take other than an engineering course in the college.

Are the chances of a young man of collegiate training as good on a New York State farm as in other industries?

Yes, if he is naturally farm-minded. We believe that for the money invested and the many things in the life of the farmer other than money and not obtainable in other industries, that such a man as suggested would have a better chance there.

Will it pay a farmer to go to Cornell Farmers' Week?

Yes; it will be an education to attend Farmers' Week. He will get new ideas, learn new methods, find a rest and change, and can return and carry out his new ideas at a profit. It is a paying proposition. Rooms and board are secured at moderate cost, and the expense is not very great.

How can we teach our sons and daughters to appreciate farm life, and keep them at home on the farm?

From their youth up show them how much there is of interest on the farm. Give them an interest in the farm crops or animals. Make the home equal, if not superior, to that of their associates in the village. In a word, make the farm life and

home so attractive that those who are naturally farm-minded will not care to leave it. "He told his twelve-year-old son to milk the cow, feed the horses, slop the pigs, hunt the eggs, feed the calves, catch the colt and put him in the barn, split the kindling wood, stir the cream, pump fresh water in the creamery after supper, and be sure to study his lessons before going to bed. Then he went to the farmers' club to discuss the question, 'How to keep the boys on the farm'!" Above all establish the idea that the almighty dollar is not the real measure of success in life.

What is the best way to invest the earnings of farm boys and girls?

A savings bank account always increases self respect and is desirable. The present-day postal savings bank affords an easy way for a boy or girl to start such an account. The earnings may be invested in poultry or other livestock or in growing a crop.

Does the grange help to better the farmer's condition?

Most emphatically so. It helps him socially by bringing him in contact with his neighbors, and many times financially in cooperation. This is evidenced by the condition of the farmers where the grange has existed longest.

What can we do to have a good, efficient grange?

Get together the leading farmers with their wives and sons and daughters, and invite to meet with them a representative of either the state grange or the local county grange, who will come without cost, and talk over the benefits derived from the grange. Such a visitor will then, if desired, organize those present as charter members of a grange and give them such instruction as is necessary for them to carry on the organization.

Is it a good thing to take village people or people not engaged in agriculture into the grange?

Most emphatically, no. While these people are just as good citizens and have just as good morals and high ideals as those from the farm, their thoughts and aims in life are entirely different, and when the doors of a grange are opened to such it is impossible to afterward close them; and, because of its many attractive features, townspeople are glad to avail themselves

of the opportunity, with the result that the grange very soon loses its distinctive agricultural feature and thus fails to serve the purpose for which it was organized.



A Grange Hall

Will the price of farm lands continue to advance in New York?

Many farm lands in New York have been altogether too low. Unquestionably the demand for good land will continue. It must be remembered that the real value of land is its interest-earning power, and so long as lands advance in productiveness they will also advance in price. It is a most lamentable condition when the price of land goes up and the producing power of that land goes down. This spells disaster with a big D.

Are farmers' prospects for the future as bright as they are pictured?

It seems to me they are exceedingly bright for the progressive farmer.

Will it pay better to buy a farm and run heavily in debt, or rent?

Many make the mistake of buying a farm with little or no working capital, which is as necessary on the farm as in the store. If a man has good health and understands his business, he should not hesitate to buy a farm even if he has a reasonable amount of debt, so long as he has enough working capital to pay his bills and for labor in cash.

Which would a young man better do — buy a farm with all stock and tools, or buy a run-down farm at a much lower price?

The former by all means. The most expensive farm to buy is one that is run down. Much must be expended before it can be made productive, which expenditure should be added to the purchase price. Usually it will take all the produce from such a farm to build it up, and in the meantime the farmer has nothing on which to live. For a poor man the productive farm is always best, even at a much higher price.

What sized farm is best for a young man with small capital to buy, providing his habits and credit are good?

In addition to good habits and credit, he should have good executive ability. Then buy a good, small farm and add to it when he can afford to, rather than buy a large one and be obliged to sell part of it.

Is it profitable for a man on a small farm to grow cash crops bringing in \$50 or \$60 per acre, even at a little more labor, and buying what hay and grain he needs, which at best bring in \$25 or \$30 per acre if grown?

Many of our more common crops can be grown so as to give more profit than the figures given. In general, we should use more of the things we produce and not buy and trade so much.

Which is better to buy for raising stock, a hilly farm at \$50 per acre or a level farm at \$100 per acre?

For purely stock raising, the hilly farm at \$50 would probably be the most economical if the soil was right. Level farms are best for general farming.

What in your judgment is the broadly successful farmer?

First, the man who is able to live from the land.

Second, the man who leaves his land better than when he took it.

Third, the man who is most interested in the welfare of his community, in civic, educational and religious matters.

Will good crops or good management pay better?

Good crops cannot be expected long without good management.

Which is the better to follow, special or general farming?

Much depends on the man and the locality. On a small place well adapted to certain things, such as fruit, special farming

is to be commended. In most cases, what is known as general farming is better. With the latter there are several sources of income, labor can be employed by the year, and it is much easier to keep up the fertility of the land.

Is it possible to make a success of hay and grain farming without keeping stock?

If no stock is kept the hay and grain are likely to be sold, followed by buying manure and commercial fertilizer, and the farm will run down. We must raise clover and plow under and not be obliged to buy the most costly part of our commercial fertilizer. Then the decaying vegetable matter will assist in releasing the potash already in the soil and save buying.

Does it pay for a farmer to go into truck farming?

If a man is located near a town or city where he can readily dispose of his truck, and has plenty of labor that he can command at will, this sort of farming is very profitable. But if one must ship to the large markets and compete with all the world, or is restricted in labor supply, he would better not attempt it.

Would it not be better to get more for what we grow, instead of trying to grow more?

This is an old question. Our observation has been that those men who grow the largest crops grow them at the least cost and therefore have a margin of profit at the same selling price, where their neighbors growing smaller crops will have no profit or perhaps a positive loss. The first effort of a farmer should always be to increase the productivity of his fields, no matter what the crop; then to produce those crops suitable to his soil, for which there is the greatest demand. There has never been a time when there was a glut in the market of any article of superior quality.

What do you understand by intensive farming, and would you recommend such farming rather than our present extensive farming?

On many farms the tendency is to work over too much land, spending a great deal of effort for a comparatively small return per acre. This is extensive farming and very often is unprofitable, particularly in view of the scarcity and high price of labor. Intensive farming is working smaller areas, but do-

ing the work more thoroughly with regard to the underlying principles involved in crop production and soil management, so that nearly or quite as much total product may be obtained at less cost from the small as from the large area.

Is there any way that farmers can be induced to work together and combine in selling their produce?

Cooperation in sale of farm products is an excellent thing. In the majority of cases where it has been tried it has not been successful. For this there are two reasons: First, a jealousy and an unwillingness to give and take and stand dictation; second, and perhaps more important, such associations have attempted to do business without a well-qualified manager. The few associations that have been successful are those which have been wise enough to employ at a liberal compensation a business man trained in the particular line that was necessary to take up. Then, too, there must be enough of any one product grown in a community to make it worth while to combine. No co-operation of any kind can succeed unless the individuals will eliminate selfishness.

What is your opinion of a book farmer — one that farms it with books and lets the golden rod grow over his door sill so he cannot shut the door?

“This ought he to have done and not have left the other undone.” It certainly is a poor farmer who would let the golden rod grow over his door or allow noxious weeds to flourish anywhere on his farm; but no one will believe that he got the warrant for any such practice out of a book. The farmer who does not read agricultural literature is handicapping himself as much as would a physician or a lawyer who failed to read the medical and legal works necessary for proper knowledge of the principles and practices of his profession.

Is it true, as stated recently in an agricultural paper, that none of the state experiment stations can show a profit?

An experiment station farm is not run for the purpose of making money or being a model farm. Very many things must be undertaken which mean a certain loss, for it is as important to prove that things are not so as to achieve success. The only experiment station farm which we have any knowledge of that paid a profit was that at New Brunswick, N. J., which for

many years was self-sustaining. This was due both to the good management of the late Dr. Voorhees, and to the fact that a large portion of it was devoted to the support of the dairy herd, the milk being retailed in the nearby city of New Brunswick.

How shall we solve the farm-labor problem?

An excellent plan is to employ labor by the year where the laborer lives in a house on the farm. This insures permanency, and with his own home and garden he becomes more of a fixture.

What is the farmer to do about the hired-man question when his wages are more than receipts from the farm?

The wages of the hired man are no more than they should be in proportion to the rise in value of farm crops and the cost of his living. If the wages are more than the receipts from the farm, there must be something wrong with the farmer or the management.

Is there any good farm help to be had from the city, if so, how can it be obtained? Can a farmer get a good laborer by applying to the state bureau?

Occasionally there is a man in the city who was country bred and is desirous of going back to the farm, who will make very good help. Ordinarily even these have become so affected by city ways and life that they are not satisfied with farm conditions. The ordinary city man out of a job is rarely worth his fare from the city as farm help. When one can obtain foreigners who have been farm hands in their own country, and who have not been in the city long enough to be contaminated, they usually make excellent help.

The labor bureau of the State Department of Agriculture supplies farmers with very many excellent hands. Those who have been in this country and for a long time in the city are usually not desirable, but many others are supplied that are giving excellent satisfaction to those who employ them.

What have you to say in regard to neglect of farm machinery?

Much complaint is heard relative to the amount of tax that the farmer has to pay, but one rarely hears anything said about the tax to which he subjects himself when he leaves his farm machinery out from fall until spring. One can travel almost

anywhere, even in the best agricultural sections, and see in the fields expensive mowers, twine binders, hay loaders, not to say wagons and other farm equipment, that never see any housing except the blue sky of heaven. When one realizes that only a little effort would put such machines under shelter, and that their life and usefulness by so doing would be prolonged many years, such a practice seems inexcusable. An agent of one of the large farm machine works recently said that if the machinery sold was properly housed their sales would be reduced one-half.

All else being equal, how many acres of grain would a farmer have to sow in order to make it profitable to own a grain drill? What type of drill would be the best on a farm where we have but few stones but always some trash? Is sowing timothy seed with the drill at the same time of putting in the grain the best method of seeding on fall grain?

It would scarcely seem a profitable investment to put eighty or ninety dollars in a grain drill to use one day or more each year to put in ten acres, yet the grain will be very much better under ordinary conditions if so put in. With an amount not larger than this one can usually hire a drill. If a man is to put in very much more than that, for various reasons, it would pay him to use one. Under the method described a disk drill — such a one will not be clogged by trash as will one with pipes — is to be recommended, and it leaves the ground in very much better condition. This method of seeding saves time, ensures uniformity in distribution and covers the seeding. The only objection to it is that too much seed is liable to lodge in the furrows between the ridges left by the drill.

Is a gang plow a practical machine, providing plenty of good horses are kept?

Yes, if the land is level, and with power enough to go deep. Most of the gang plows are too small to do deep plowing. They are more suitable for orchard work and surface cultivation than for breaking fields.

Is the disk harrow an advantage over the spring-tooth harrow, and what kind of disk harrow would you recommend?

It is most decidedly the better tool. The true principle of fitting the soil is to move as many particles of earth as possible; this the disk does. The spring-tooth harrow, like some men, makes a good deal of demonstration but really accom-

plishes very little. Almost any of the manufacturers of agricultural machinery turn out disk harrows which are excellent — really there is very little choice between them.

Which is the best whiffletree to use for draft horses — short or long?

This depends somewhat on the character of the work to be done. A longer whiffletree should be used on a wagon than for a plow. It depends also on the size of the horse. One never should be so short as to bring the traces close to the legs, nor so long as to bring a wedge draft on the collar.

Which is preferable to purchase, a single or double row Planet Junior cultivator?

Double row by all means. One man with two horses can do very much more effective work with a double than with a single row cultivator, even though he goes twice through a row; and after the corn and potatoes are well up, a properly adjusted cultivator will clean up two rows at a time thus doing double work.

Is it advisable for the small farmer to consider the farm tractor as his motive power?

That time is coming; for the present most of us will use horses.

Would you advise a farmer to have an engine or power on the farm?

This would depend altogether on the amount and character of the work he has to do. A small engine is exceedingly useful for pumping water, running a spray pump, or many like operations. A larger engine, for threshing and doing other work of the sort, may or may not be profitable. It is exceedingly convenient to have one's own power, but when the amount invested in it is considered and the interest, including depreciation, which will be from 10 to 12 per cent., it will on the ordinary farm usually be found that this interest will pay for the use of hired power, and the farmer has no responsibility or need for repairs, nor is he obliged to store.

Is electricity practicable for farm use?

Where electric power can be generated on the farm or obtained from nearby power it is extremely practicable. It may be used for running the farm machinery as well as that in the house, and also for heating and lighting.

What is the best and most economical farm fence, and how built?

Without question the most economical, as well as the best fence is one made from woven wire. These are not expensive, and are strong, durable and easily constructed. The posts are a large part of the cost. Where timber is scarce and high those made from reinforced concrete are rapidly coming to the front. On account of the scarcity and high price of the hard woods, many are using with satisfaction the soft woods treated with creosote or preparations such as carbolineum, which extend their life to equal or longer than that of the hard woods.

How long will hard pine last for fence posts?

I would not consider them equal to cedar, but they will outlive soft pine, poplar or basswood.

Can gate posts be set so that frost will not heave them?

Yes, set in with full six inches of cement around and below them, and with a bar fastened horizontally to the bottom.

Will cement put around posts in the ground save them from rotting?

Yes, if the cement extends somewhat above the ground and slopes from the post. It will keep the water away and also prevent the post being forced to one side by heavy winds or otherwise. It is always wise first to protect such posts with a preservative, such as a creosote preparation or carbolineum.

What is the cause of farm products being higher than they were on a gold basis?

Supply and demand, more people to buy, and the extravagant way our people have of living.

What per cent. of money paid out by the laboring class of people in the city of New York for agricultural products goes to the farmer?

Careful research shows from 35 to 50 per cent. It must also be remembered that the average resident of the city buys in exceedingly small quantities, and, while theoretically the discrepancy is too great between the price the producer receives and that the consumer pays, it is a very difficult matter for a farmer with a small amount of produce to come directly in touch with the consumer several hundred miles distant.

What is the best way to make money, farming or working in a factory at \$6.75 a week?

Surely one would not acquire a competency very rapidly at a wage of \$6.75 a week; in fact, it would seem that this would scarcely enable one to live. It is a poor farmer or farm hand who could not command a better price than this. This simply from the standpoint of dollars and cents. Farm life is broadening; that in the factory exceedingly narrow, not to say unhealthful.

How many hours should a farmer work?

Not more than ten or twelve at the extreme, although, if he is the right kind of a farmer, he will probably work with his brains many hours more. A man like a horse can only stand about so much work; when he attempts to do more, he does it at the expense of his future usefulness, and his work is not so well done.

Is it advisable to keep complete farm accounts?

Decidedly so, both from the standpoint of business and for the satisfaction of the farmer. The State Department of Agriculture, Albany, and the U. S. Department of Agriculture, Washington (Department of Farm Management), will furnish suitable books for such accounts with directions for use.

Does it pay farmers to have telephone service?

It certainly does. One can scarcely conceive of a farmer in reach of a telephone system who would be so dense as to refuse to put one in. Aside from the convenience of communicating with his neighbors, in cases of disaster they have proved invaluable. The following are actual cases and the number might be multiplied: A farmer's wife was taken with a severe attack of heart failure; the telephone brought the physician within a half hour. He stated that fifteen minutes later the trouble would have been fatal. Another man found that his woodhouse was on fire; the telephone quickly summoned the neighbors and the house and barn were saved.

Is the pheasant a desirable bird for the farmer or is he for the benefit of the hunter only?

Much has been said by bird fanciers in favor of the pheasant. The testimony of farmers who have had the pheasant in close contact is very unfavorable to the bird. They have been known to do serious injury to the buds of trees as well as in other ways.

What benefit are birds to farmers?

They are of much benefit in every way. Most of our native birds live on insects which are exceedingly injurious to the farmer; many birds consume large quantities of weed seeds. If it were not for birds, the farmer would be driven out of business by insects. While some birds do some injury, the good far outbalances it. We spend thousands of dollars each year for labor and material to destroy insect life; the bird does the same work for a small portion of his board in a few cherries or berries.

Does the benefit received from good roads equal their cost?

I believe it does, although the state highways as now constructed cost more than they should.



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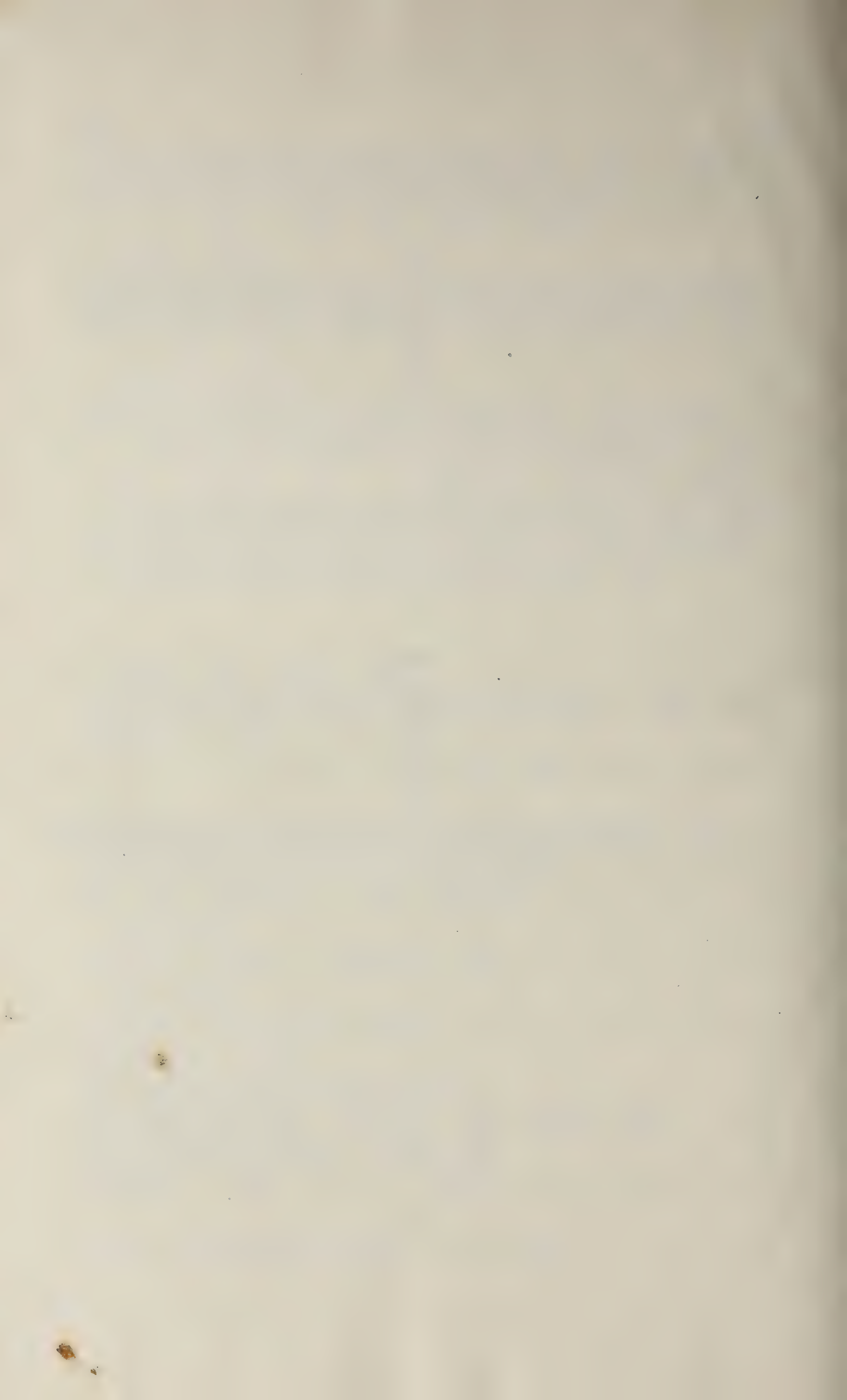
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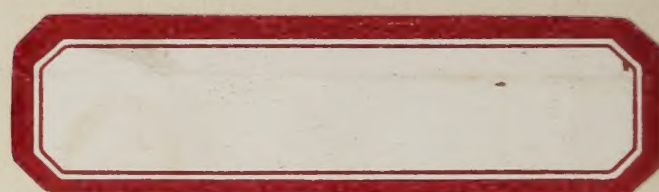
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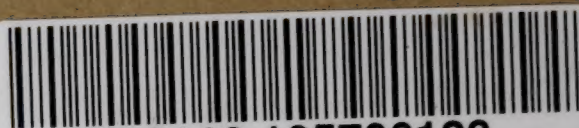
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